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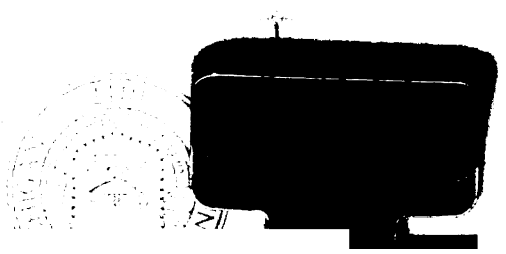
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HOW THE JAPANESE MERCHANT SELLS CARS—*See Page 8*

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MOTOR WORLD

for

DEALERS, JOBBERS AND GARAGEMEN

Volume LIII
No. 1

New York, October 3, 1917

Ten cents a copy
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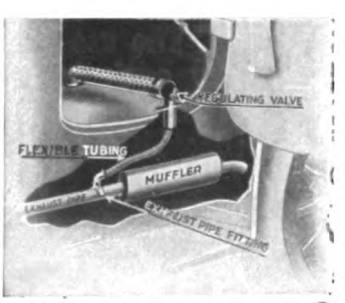
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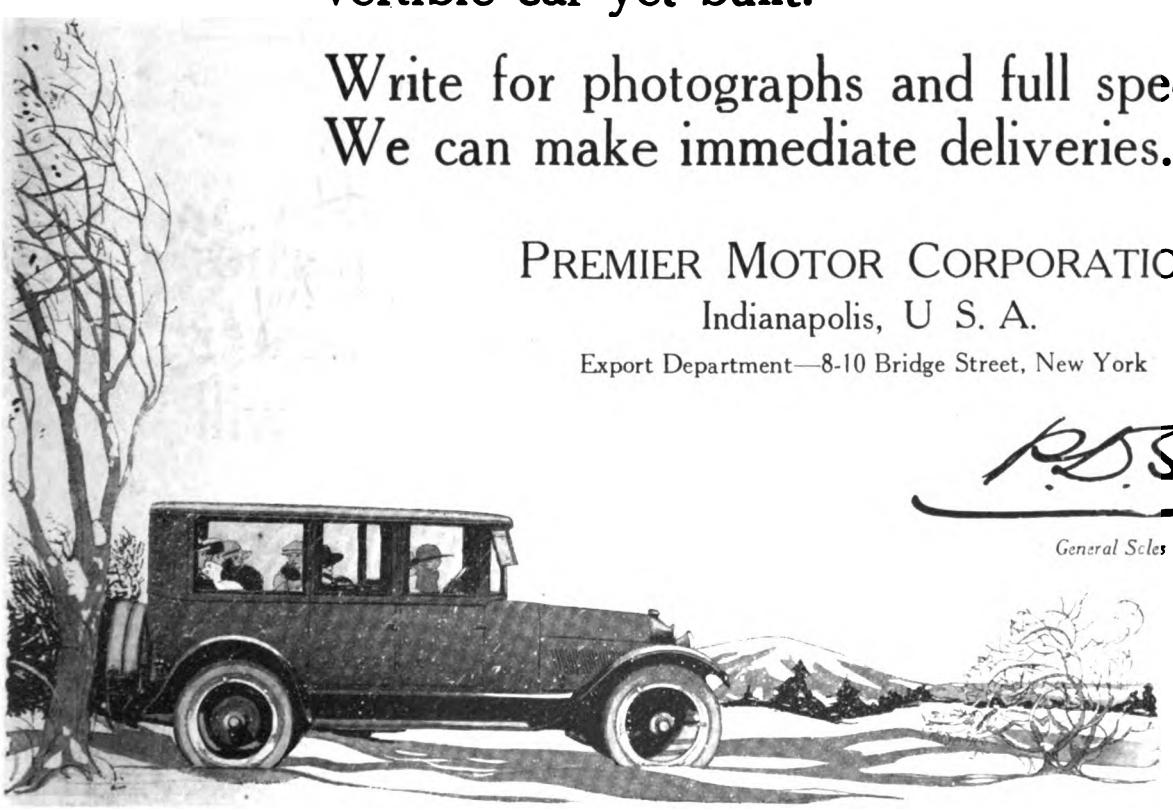
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for
DEALERS, JOBBERS AND GARAGEMEN

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MOTOR WORLD
for
DEALERS, JOBBERS AND GARAGEMEN

Vol. LIII New York, U. S. A., Wednesday, October 3, 1917 No. 1

Add the War Tax
To the Retail Price

A WAR tax of 3 per cent on motor cars and trucks has nearly become a law. It is so near being a law that it is time to figure on how to meet the problem.

The law will provide that car manufacturers must pay 3 per cent on the factory selling price of all cars and trucks. This means that on the car or truck which retails at $1,000 and wholesales from the factory for $800 the factory must pay the government 3 per cent, or $24.

The factories undoubtedly will pass it on to the distributers and dealers, and the only thing left to do seems to be to pass it on to the consumer. It isn't a question of what ought to be done. It's GOT TO BE DONE. The tax should have been levied on the consumer in the first place, as was proposed in the first revision of the bill, but inasmuch as both branches of Congress couldn't agree on that and inasmuch as it is about to be passed the other way, the only thing to do is to meet the situation as it exists. (Don't knock. Be an American.)

What Distributers Must Pay

Also, distributers must pay 1½ per cent on cars in their hands when the bill becomes a law, and apparently it will become a law the day after it is passed and signed.

Putting the tax on the dealer—through the manufacturer—is making the way harder for the dealer, but if it's done it's done, and there's no use looking backward. Don't talk about how or why the burden was put upon you; figure on how to carry it.

Motor World has investigated in several trades and finds the opinion in all to be that the tax should and MUST be passed on to the consumer. The manufacturer, distributer or dealer CAN'T carry it. There are taxes enough now.

The only way left is to pass it on to the consumer. Don't get any other idea into your head. The consumer MUST pay it or YOU must quit business.

A Steinway piano executive says: "The public has pretty well made up its mind that it must pay war taxes, so we don't anticipate any difficulty in collecting the tax. We shall say, 'So much for the piano plus so much for tax,' and sell them that way." Pianos, take notice, are in just the same position as cars. The prices are about the same, the merchandising system is similar and the tax is the same.

This Dealer Was Ready

Also, Charles W. Brown, manager of the Winton branch in New York City, has been selling Wintons all summer with a clause in the contracts to the effect that if a war tax should go into effect before the delivery of the car the customer must pay the tax. And he says 98 per cent of the buyers never even blinked at it.

In the drug field the Riker-Hegeman people say all the war taxes combined will make certain price increases necessary. The manufacturer and the dealer simply CAN'T and WON'T pay the tax. The consumer MUST.

In the cigar field the United Cigar Stores Co. says the consumer MUST pay the war taxes. The machinery of the business won't stand any more load.

In the coal field chestnut coal sells now for about $9 a ton. Do you see any dealers paying many war taxes at their own expense? They have made the consumer pay all along the line. YOU are paying war taxes yourself in a hundred different ways, and when

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a store boosts the price and says "war tax" you never even hesitate.

YOU PAY!

And so it is with the whole public. It is educated to pay war taxes. It is willing to pay war taxes. It is standing behind the government. *And we must all do the same.*

The first big mistake the dealers of America don't want to make is to let a single one of these manufacturers' 3 per cent war taxes come out of dealers' cash drawers. If the factories must pass it on—and most of them must, it seems—the dealers too must pass it on.

Look Out for a Weak Step

One weak step, one concession to a customer, and the whole buying field will get the idea that profits in motor cars are so big that the dealers and manufacturers can afford to stand the tax.

But don't kid yourselves. The dealers and manufacturers CAN'T afford to stand the tax. With normal conditions dealers go out of business fast enough, so don't take any chances with abnormal conditions.

With the public in a tax-paying frame of mind it will pay the war tax without question if the dealers stand firm, but if half the dealers foolishly back down in the face of customers' demands and make a wrong start the damage will be great. The dealers will never be able to get on their feet again.

The only thing to do is to get the 3 per cent. Furthermore, don't monkey with any 1½ per cent. The minute the law goes into effect start charging 3 per cent of the wholesale on all the cars you sell. Play safe. If you don't, you may find yourself in a fine mix-up with your cars and percentages.

And at the same time that you start getting the war tax start getting the full list price and the freight and everything else—if you haven't been doing it. Start with a clean slate. You're going to need all the profit you can get.

It has been suggested that the manufacturer raise the price of the car and let the consumer pay the tax under a different name. But there has been a lot of price raises already, and, furthermore, raising the list wouldn't help unless discounts were revised at the same time.

The best way out seems to be to approach the matter plainly and frankly and add the tax as a tax and insist that it be paid by the consumer.

Of all the dealers Motor World has approached on this subject none has said he believed he couldn't get the tax if he went after it.

And remember this: The war is bringing trying times. It is going to separate the fit from the unfit, the big brothers from the weak sisters. A lot of business houses, with weak methods, are going to slip badly, and the right one will come through stronger than ever.

Decide to Stay in Business

Right now is where you've got to classify yourself. If you want to stay on the map get a good grip and you can stay. But if you don't inject some spizz and backbone into the situation and tackle problems in the right way you might as well start now to look for the exit light.

Let's all stick together on this thing and hold the great merchandising organization of this industry intact. It is your duty as a patriotic American to STAY IN BUSINESS.

Cars Are Classed With Cosmetics

Makers Must Pay a Tax on All They Produce and Are Expected to "Pass It Along"

WASHINGTON, Sept. 30—Automobiles, motorcars, motor trucks, motor boats, and motorcycles will have to pay a 3 per cent war tax. This has been decided by the Conference Committee, which is a combination committee made up from the Ways and Means Committee of the House and the Finance Committee of the Senate.

It is practically settled that this 3 per cent tax to be paid by manufacturers on the price of the vehicle as sold to the distributer will stand.

Although the measure is not yet a law but only a report from the Conference Committee, it is generally accepted that it will not be changed.

This means that manufacturers of automobiles, motor cars, trucks, motorcycles and motorboats will be held responsible by the government for this tax. As mentioned last week, it has been suggested by the Conference Committee in Washington that this tax be passed on to the wholesaler or dealer and that in turn he will pass it on to the consumer.

It is certain the consumer will have to pay it, but it is not known whether he will pay it as a special war tax or in the form of an increased price on the vehicle. As prices have been increasing very much during the past year and sales diminishing it is questionable if prices will be raised, as in all probability the revenue will come as a war tax.

Motor cars, motorcycles, motor trucks and motorboats in the hands of retailers when this war tax goes into effect will be exempt. Such vehicles held by wholesalers will be subject to a tax of 1½ per cent. It is not known when the law will go into effect, but undoubtedly it will become effective as soon as the measure can be made a law.

The present situation leaves it up to the retailer to secure the tax. This is the case unless the manufacturers generally increase their prices to pro-

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vide for it. Should the manufacturers not do this then the distributers and the retailers will undoubtedly be called upon by the manufacturer to provide the tax. Naturally the manufacturer will bill the dealer.

The dealer will have to sell the car at an increased price or sell it at the present price with a special war tax added.

The difference in price to the consumer will range from $10 up. On a car that a dealer buys for $800, the war tax will be $24. On a car the dealer buys for $2,000 the tax will be $60.

The present tax of 3 per cent which was finally adopted is really a compromise by the Conference Committee. The Ways and Means Committee of the House which started drafting this war measure first determined upon a 5 per cent tax. The Senate would not agree to this.

The Senate Finance Committee, a committee of the Senate which had to draft a revised tax, did not favor taxing manufacturers but proposed a federal license tax on all cars in the hands of owners.

When the two committees met in conference they would not agree on either and as a result the 3 per cent manufacturers' tax stands as a compromise.

It is generally rumored here that the House representatives on the Conference Committee were opposed to the federal registration tax on the ground that it might influence voters whereas if the matter were passed on to manufacturers such would not be the case. It does seem as if the present method is a new way of chasing around the bush, and that while there will not be a federal license tax the new car owner will have to pay the bill any way.

It cannot be conceived why a tax should be placed on motor trucks. The members of the Conference Committee have declared that the present 3 per cent tax is purely discriminatory. They declare that revenue is needed and that taxing trucks is a possible source of revenue.

As it is trucks, motor cars, motorcycles and motorboats have been classed with talking machines, cosmetics, jewelry, motion pictures, etc. There are other lines of goods that are similarly taxed such as musical instruments, motion picture film, sporting goods, cameras; chewing gum and perfume are let off easier with a 2 per cent tax. On the other hand all other types of transportation, such as bicycles, horse carriages, horse wagons, and in fact everything of the nature is exempted.

Add the Tax, Say Dealers

Practically Unanimous Sentiment in Favor of Passing It Along

NEW YORK, Oct. 1—Extensive investigation among dealers and distributers all over the country reveals an overwhelming sentiment in favor of adding the three per cent war tax to the price of the car when sold and making the purchaser pay it just as he now pays the freight. This, say dealers, is the only logical method.

Plans to increase the list price of cars so as to make the purchaser pay the tax but in an indirect manner are frowned upon. Neither will dealers consider any plan to absorb the tax themselves in whole or in part, pointing out that the margin of profit already is so narrow that it would not stand such a reduction.

The following questions were asked of various Detroit distributers and dealers, concerning the effect of the War Revenue Bill:

Motor World Asked These Questions

1—Will the past price increases cover this tax, and allow the dealer to deduct it from his profit, without passing it along to the consumer; or

2—Is it best to collect this tax direct from the car purchaser, as a direct war tax, without advancing the present price; or

3—Should the prices be adjusted to include the war tax?

The majority of the dealers seemed to feel that the tax should be absorbed by the buying public as their contribution to the war fund, and that the prices of the cars should be revised to include this tax.

This, in many respects, seemed to them to be the better way. Particularly in the lower priced cars, which are sold on a close margin of profit, the profit would not stand the war tax. Selling effort would be increased by advertising the cars at one price, and then demanding an excess charge afterwards to include the tax. Besides, if the tax was placed as an extra, there would be a temptation to many dealers to assume the tax themselves, which would tend to unsettle business conditions as much as were the practice of throwing in tires and spotlights indulged in promiscuously.

High-Priced Car Dealers Not Alarmed

Inasmuch as the tax must come eventually out of the buying public, the dealers seemed to think that this is where the tax should be placed in the first place, and that no effort to place it on the manufacturer, dealer, distributer, or bury it as an extra would be successful.

Dealers in cars of the higher price class do not seem particularly alarmed over the effect of the tax. They state that a prospect desiring to buy cars in this class will not allow the small additional amount to influence his purchase.

Past price increases have eliminated from the higher price field all those possible purchasers that would be prevented from buying by the difference in price.

However, in the popular price class field, the dealers are not so optimistic as to the effect of the tax. It seemed to be the opinion of many dealers that the prospect desiring a car selling up to $1000 would see the tax, instead of the price of the car—that is, the tax would look larger to them than the car cost. And many stated that the farmer would be more adverse to buying because of the tax than would the city dweller. The latter has become used to price increases, and does not consider them in the same light as does the farmer.

Recent price increases in the low price field, combined with the fact that other price increases are impending, also tend to make the outlook in this field poor, according to many dealers.

As a whole, the majority of the dealers seem to have few cars in stock, though one dealer was an exception to this, and stated that he would take all the cars he could get, in spite of price increases or taxes. This dealer stated that the main thing needed was confidence in the market. That if prices were high now, they would doubtless be higher later, and that he intended to cash in while it was possible. For, he said, the business was there, and he was going to get it.

Will Continue to Buy

This dealer seems to have summed the situation up right. Though the tax, no matter how it is handled, will tend to slow the business up in the popular price field, at least, the public will still continue to buy cars. The main thing is to realize that this tax is a war necessity, to have confidence in the automobile industry, and to work a little hard to break down any increase in sales resistance that may result from the tax.

Used car dealers believe that the tax will have the effect of increasing the used car business throughout the country and at the same time of increasing the prices of used cars which are always regulated by the retail cost of new cars.

Don Lee, Los Angeles, says: "We will add to the list price whatever amount the Government decides on taxing purchasers. In other words, we will act as a collection agency for the Government."

Russell P. Taber, Hartford, Conn., says: "We will charge sub-dealers and cus-

(*Continued on page* 40)

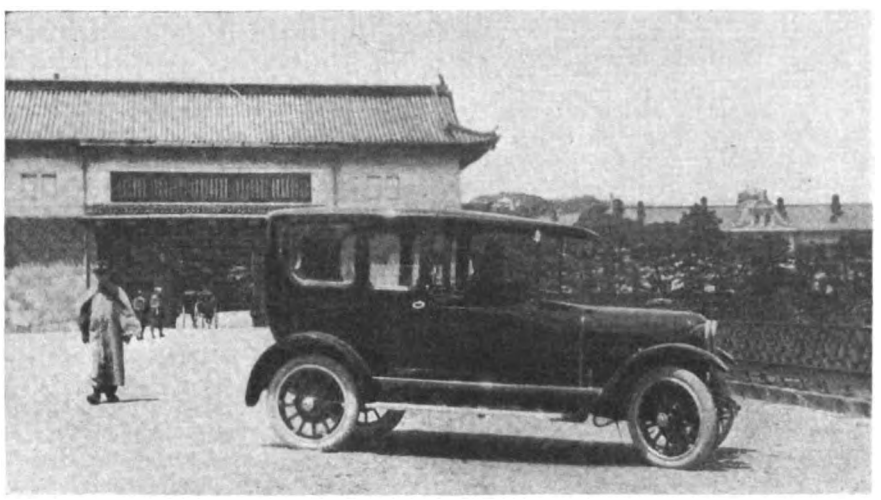
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Selling Cars in Japan Is Not Easy

However, It Can Be Done—Japanese Merchandising Methods Are Different, But They Are Getting Results

By Hi Sibley

Motor World Special Correspondent



This is the kind of car the Japanese purchaser requires. It is considered beneath Japanese dignity to drive one's own car

JAPAN to-day is a potential motor car market. If the American manufacturer is disposed to meet conditions half way he will find it an extremely lucrative one in the very near future. The Japanese are becoming fabulously rich—for Japan; the European war has turned a tide of restless gold into her coffers and her people have more money per capita than ever in history.

The country is foreign trade mad; her manufactures have received a tremendous impetus from the war and new industries have sprung up all over the country.

Old-established plants have doubled and quadrupled their capacities, puttering listless little concerns have inhaled a deep breath of the prosperity ozone and have expanded enormously, and the great dockyards, such as the Osaka Iron Works, the Kawasaki and Mitsubishi are running to the limit of their capacities with day and night shifts to supply vessels to carry her mountains of made-in-Japan wares to markets abroad. Prodigal dividends have been declared by industrial concerns, and each succeeding month bank deposits shatter all former records. Japan is riding on the high tide of prosperity.

Your Japanese Is Thrifty

"Easy come, easy go," has never been a weakness of this thrifty nation, but with sudden riches piling higher day by day the Japanese is spending his money, and he is spending it handsomely. To be sure, the number who are directly enjoying this prosperity are relatively few, but they constitute a very receptive field for the motor car dealer.

And yet, in spite of all this prosperity, at this writing the motor car has just got a toe-hold in Japan. But it is a very secure hold, that toe-hold, and is a step to nation-wide popularity. To-day there are less than 1700 cars in Japan; the Philippines, with her magnificent U. S. Government roads, have passed Japan by more than twice the number of cars, and the total in China, where the foreign resident receives more commercial encouragement, is nearly double that in Japan, although they are restricted to the seaports Shanghai, Canton, Tsingtau and the capital, Peking.

Why Sales Are Slow

We Americans have generally regarded the Japanese as immeasurably superior to and much more progressive than other Asiatic races, and one is curious to know the causes for this motor car tardiness in Japan. There are several interesting reasons why it has not come into more general use. The principal one is, perhaps, that up to this time the Japanese could not afford so costly a luxury. And it has been costly.

By the time freight and 35 per cent duty have been paid, the motor car in Japan represents an investment of from 50 to 100 per cent more than in America. Moreover, the per capita wealth in Japan has been about one-eighth of that in the United States. Coupled with this, the Japanese is inherently an exceedingly thrifty individual, and to spend such a vast sum on something that he could do without impresses him as being prodigal extravagance.

For instance, the Ford car, which is virtually a household necessity in America, costs him to-day in the neighborhood of $1,000, and other cars are proportionately as expensive. Its upkeep, also, is greater.

The current prices of gasoline are from 40 to 45 cents per gallon, and a grade that is much inferior to our stand-

Number of Motor Cars in Japan

Population of Japan....62,000,000 Cars in use 1656
Cars per capita.....38,647

Cities.	Population	Number of cars in vicinity.
Tokyo	2,250,000	841
Osaka	1,300,000	123
Yokohama, port	394,000	178
Kobe, port	380,000	92
Kyoto	442,000	9
Nagoya	378,000	45
Hiroshima	142,000	3
Shimonoseki, port	58,000	26
Island of Hokaido (extreme north)		11
Island of Kyushu, includes Moji and Nagasaki (extreme western)		47
Island of Shikoku (southwest of main island)		20

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ard, and the owner must have a chauffeur.

To drive one's own car in Japan is regarded as menial, and it is, indeed, a courageous Japanese gentleman who essays to stoop to this work in the face of popular prejudice unless the chauffeur is in the car with him.

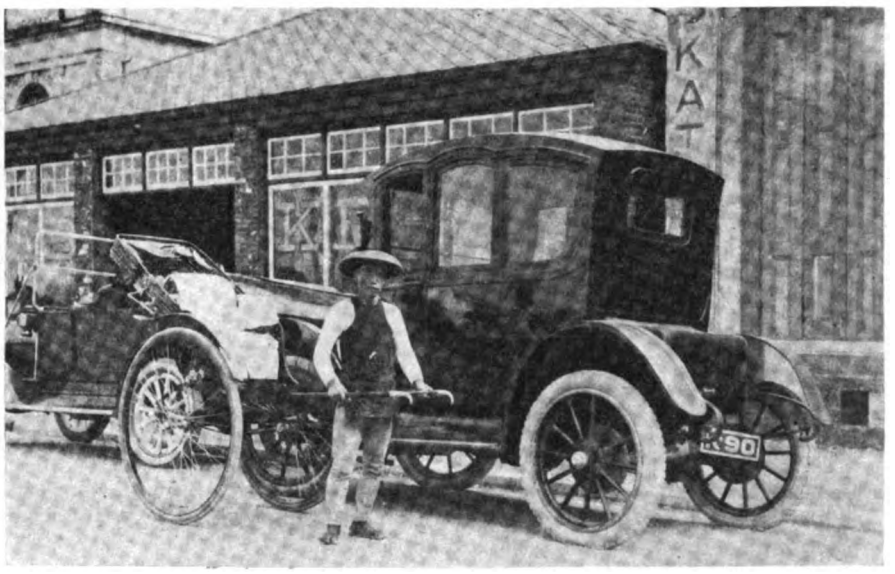
Even though he never used him as such, the Japanese motorist must maintain a chauffeur for appearance's sake. Often there will be a footman as well; a precedent established by the horse-drawn vehicle, where custom demanded that the carriage literally be draped with these ornamental creatures—one beside the coachman and two behind.

The chauffeur costs our motorist from $15 to $25, and he must pay the footman at least $4 a month, in addition to all their uniforms. Thus, with all these traditional accessories the Japanese who would a-motoring go finds himself at much greater expense than the American of moderate means, who can purchase a car for the price of a first-class victrola, and drive, wash and repair that car himself.

A curious phase of this caste system was related to the writer by one of its victims, an alert, progressive and liberal-minded young Japanese who had been educated in America. He was much interested in motor cars and had great faith in their future in Japan, and returning to his native land concluded to establish an agency for a number of well-known American makes and which, incidentally, he is successfully selling today—Packard, Paige and Chevrolet.

Filial Obedience a First Duty

Now, in Japan, filial obedience is a son's or daughter's first duty, and a father's wishes are usually respected, no matter how narrow those wishes may be.



The old and the new method of transportation in Japan. One prominent dealer says there is no obstacle to extensive touring except the disinclination of the motorist

Our young Japanese stated his ambition to his father, but the latter, being an old-time Japanese and not in sympathy, therefore, with foreign ideas, flatly objected. Such a business would entail much grease and dirt, he declared, and some manual labor. The idea was revolting to the father, for he was of a family of bankers, none of whom had ever soiled his hands with common work.

"But in America it is regarded as highly respectable—even commendable—for a young man to take up this work," the son protested.

Family Traditions a Bar

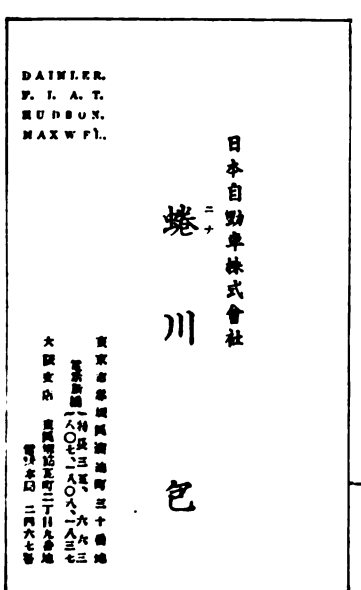
"East is East, and West is West," retorted the father, or words to that effect, and he remained obdurate. Working about machinery, in his mind, was mechanic's work, not a gentleman's pursuit, and if his son insisted on thus upsetting family tradition he would receive no financial assistance; and the old chap was an extremely wealthy man.

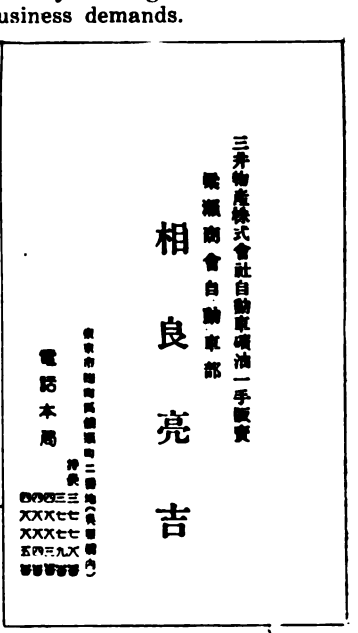
But our modern young Japanese kicked over family tradition, so to speak, and established his garage and salesroom

Several times the haughty father came around to expostulate with him, declaring that the family was disgraced by having a member who persisted in working with his hands, and to this day the family relations are still disrupted.

To be sure, the young man had little occasion to soil his hands, literally, but he was not averse to taking a car out himself and driving it to give a demonstration, and this virtually ostracized him in Japanese society. He deserves the greatest success, and no doubt will enjoy it, for he seemed to be one of the most wideawake Japanese in the motor-car business, but is badly handicapped for funds to carry as large a stock of cars as his business demands.

The Japanese motor car merchant is nothing if not progressive. One side of his card tells who and what he is in Japanese, and the other side tells the same story in English





MR. T. NINAGAWA.

TEL. Shimbashi Nos. 35, 663, 807, 1808, 1837,

JAPAN AUTOMOBILE Co.

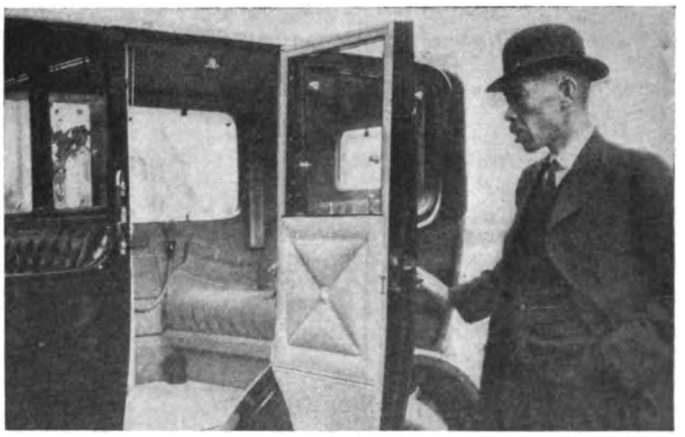
R. Sagara.

YANASE & Co.
GOFUKUBASHI TOKYO.

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Truck garage of the Japan Automobile Co. in Tokyo. This concern leases seven trucks to the Imperial Railways. Tokyo has only one other establishment of its kind



Luxury—that's what the Japanese buyer wants; well upholstered interiors and well-finished exteriors are essential. Light colors take better than dark ones

Another obstacle barring the way to greater popularity for the automobile is the lack of sporting instincts in the Japanese nature. He does not buy a car for outdoor recreation, but as a swagger, or—to use a Tokyo slang—"high collar" means of conveyance to and from business and social functions.

The Japanese does not tour in the country because such means of recreation does not appeal to his nature; it might involve some inconvenience and discomfort, and he owns a car solely for the luxury of it.

The Limousine is Popular

Probably 80 per cent of the cars privately owned by Japanese have limousine bodies, and this most expensive type being the present standard, the number of prospective purchasers is limited to the very well-to-do.

Mr. Mayesawa, who is branch manager of an importing house, can afford a small open touring car, but he is not content to thus lose prestige in the eyes of his customer, Mr. Yamamoto, who is a manufacturer, and goes about in a smart limousine, with chauffeur and footman. And so it goes. The Japanese are a very proud people.

Furthermore, a taste for cross-country touring is not likely to develop until something is done to the roads to encourage it. And at present nothing is being done on the roads. One can get about, for the roads generally are very good as to surface, and the scenery unsurpassed; moreover, large towns and cities are sufficiently frequent on the main highways to insure hotel accommodations at reasonable intervals, but there are frail bridges and occasional stretches of bad roads and some exceedingly narrow ones, together with torrential rains in the summer that leave open country travel a pastime for the adventurous, and the Japanese are not adventurous. Therefore, at present there is no demand among the prospective purchasers for the motor car as a means of outdoor recreation.

Here we come to another obstacle, but one which is being gradually overcome. It is largely prejudice. The Japanese are so intensely patriotic that they have an extreme distaste for spending so large a sum as the cost of a motor car that is made by a foreigner. They are not particularly enthusiastic over a foreigner making money out of them, individually or collectively.

If a practicable motor car were made in Japan, even though inferior to an American make at the same price, the great majority of Japanese purchasers would place their order for the Japanese car. Well aware of this sentiment, the head of a leading oil refining concern urged the writer to try to interest American capital and engineers to cooperate with Japanese capital in manufacturing a car in Japan, designed for road conditions in Japan, and employing Japanese mechanics exclusively. He predicted that in the present state of national prosperity there would be a vast fortune in the venture. Possibly his prediction would hold good. But there have been attempts to manufacture cars in Japan, and they have been such woeful failures that it is doubtful whether they will ever be tried again. Hence, knowing that the motor car must come into its own eventually, the prejudice against the foreign car is being dissolved.

Turning Point Now at Hand

The foregoing, then, pretty well explains the slow progress of the motor car in Japan. But the turning point is at hand now, and none are more keenly alert to the fact than the dealers in Japan. They are doing everything in their power to overcome the old prejudices and obstacles, and with the national prosperity in back of them, they are making very gratifying progress. Several of the dealers, in fact, complain that they cannot get cars fast enough from America to fill their orders.

Sale & Frazer, a general importing English-American house, are the largest dealers of cars in Japan. They represent the Ford, of which there are about 400 in the country; the Hupmobile and the Scripps-Booth, and have branch houses in Yokohama, Osaka, Nagoya, Moji, Keijo and Dairen. At each of these cities a stock of repair parts is carried, and at times they have had as many as 40 Fords in their warehouse. Such a stock, however, does not last long. Their main office is a large new modern structure in Tokyo, with a garage and completely equipped repair shop and assembling plant in connection.

Good Roads Are Needed

Through their house organ, the Sale & Frazar "Geppo," they are constantly agitating the good roads question, and other subjects for the encouragement of the motor car, while Mr. Frazar, chairman of the Executive Committee of the Nippon Automobile Club, and Mr. H. Carew, of the same concern, are ardent motorists and take an active personal interest in the promotion of motoring enthusiasm. The "Geppo" is published in English, illustrated with halftones of cars in typical Japanese settings, and widely circulated among the foreign residents. There is also a page in Japanese devoted to the automobile.

Next in importance are the Nippon Jidosha Kabushiki Kaisha (Japan Automobile Co., Ltd.) and the Yanase garage. The former concern imports the Maxwell, Hudson, Daimler and F. I. A. T. and their salesroom near the American Embassy is a very pretentious one. It has a frontage of 300 ft. and the cars are attractively displayed to passersby on that prominent thoroughfare. The fact that Baron Okura's son is a large stockholder lends considerable prestige and assures a very aristocratic clientele.

Owing to the demand for cars they have not carried a very large stock, but their activities are comprehensive, and include a line of motorcycles, a body-building shop in which a number of German cars captured by the Japanese at Tsing-tau are being overhauled for the Army and Navy Departments, and a squadron of F. I. A. T. motor trucks which they lease to the Imperial Government Railways. Manager T. Ninagawa is a progressive individual among progressive people, speaks English fluently and is doing much to make the motor car indispensable to the well-to-do.

Buicks are the one specialty of the

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Yanase garage, of Tokyo, which is an exclusive motor car sales organization, since the European war has stopped the imports of English Wolseleys. From the activity about this place one receives the impression that the motor car is coming into its own, and with a flourish.

Complete Body Plant

A systematically arranged body building department in which 30 handsome limousine bodies are produced every month for the Buick chasses, and one of the most completely equipped repair shops the writer has visited in Japan are features of their establishment.

The foreign visitor is not always welcomed in Japanese shops, but Mr. R. Sagara, manager of the Yanase Garage, with the assurance that his place was as up-to-date as an American garage, took very evident pride in showing the writer through, and explaining in detail every feature of their repair and body work.

Andrews & George, general importers of machinery and other American products, sell the Cadillac and Overland, and have their headquarters on Tokyo's Broadway, known as "The Ginza." In addition to their sales organization they have established an electrical repair and experimental shop, which has been a highly successful venture, for the vagaries of the electric battery have not been entirely solved by the Japanese mechanic.

The engine starting and electric lighting system, while not entirely a novelty in Japan, is still somewhat of a mystery to most repair shops, and the woes that owners experience through the ignorance of their chauffeurs on such equipment and the abuse they are subjected to, supply the Andrews & George hospital with more work than they can handle.

In this connection we might add that there is but one electric pleasure car in Japan, which came from America two years ago and has been homesick ever since. It is possible, however, that after the electric battery is more thoroughly understood, there will be a demand for these very convenient vehicles, for their ease of control and adaptability to the narrow and congested streets of the city should make them popular with the Japanese.

No Obstacles to Touring

Reverting to Andrews & George, Mr. Dick Andrews is one of the most enthusiastic motorists in Japan and has toured in every part of that picturesque country. He insists that there are no obstacles to cross country touring beyond the motorist's indifference, and from the number of trips he has made without untoward incident, one is disposed to agree with him.

The Fujiwara Shokai is happily located in the heart of Tokyo for the display of the Packard, Paige-Detroit and Chevrolet, and like all the other importers, builds bodies for the chassis shipped from America in a part of their establishment. With two or three other motor car importing companies, the Yamaguchi Katsuzo Shoten and F. W. Horne & Co., who represent the Chalmers, the foregoing constitute pretty much the entire list of automobile dealers in Tokyo.

Tokyo is, and probably always will be, the automobile center of Japan, for here are more wide thoroughfares and suitable streets. It is the capital, the geographical center of Japan, and the metropolis, having a population of two and a quarter millions, and more than half the cars in the country are registered here, approximately 900 of the 1656.

Yokohama is next in importance, having 178 cars at the last police registration. This is the principal seaport and has a large foreign colony, and renting cars to tourists from ships that remain in port only one day is a growing and lucrative trade. It is but 18 miles from Tokyo, and here are a number of motor car sales headquarters.

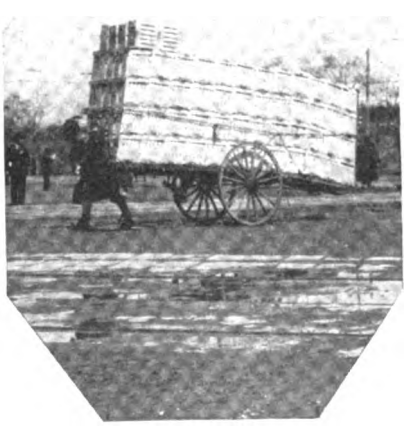
Studebakers Sell Well

A new Studebaker salesroom and garage has just been opened on the Bund, the principal boulevard facing the harbor, and a very propitious location for the display and sale of cars. Bagnall & Grimacy are doing a very satisfactory business with the Overland, as is Dodwell Garage with the Oakland, and an old established Dutch importing house, Neary & Dentici, represent the Saxon and have a modern salesroom and two garages in other parts of the city to handle taxi trade. They contemplate taking on a line of light trucks, which as yet are comparatively unknown in Japan.

In Osaka, the industrial center, are three modern salesrooms representing American cars and a few garages similar to those in Tokyo, but in other cities the motor car is not a very important commercial enterprise.

Need Tokyo Headquarters

The motor car sales organization in Japan, then, should have its headquarters located in Tokyo, or perhaps in the nearby seaport Yokohama. As business increases and the automobile enjoys nation wide popularity, branches should be established in Osaka, or the neighboring seaport Kobe, and later in the ancient capital Kyoto, Nagoya, Moji on the western Island of Kyushu, and possibly in Nagasaki, though that port at present has but very few cars, nine, to be exact, from the latest police registration.



This illustrates the average load for a Japanese adult in transporting goods over roads and streets

In making sales the dealer aims to have a personal acquaintance with his prospects. Business in Japan is done on a friendship basis more than in any other country. A number of importers prepare elaborate pamphlets on their cars and merits in Japanese, which are mailed to all the residents of their territory who can afford to buy a car. These are followed up by demonstrations in the usual manner, and frequently there is much social entertainment in addition.

Except in rare instances sales are made on a cash basis, for the pioneer dealer experienced much woe in attempting to sell on the installment, or monthly payment plan. In the early days of the motor car in Japan the time-payment purchaser frequently transferred the title to his car to another, leaving the dealer high and dry with two or three payments and a handful of pretentious but worthless papers. His only recourse was a criminal action which, in the devious legal processes of Japan, gained him nothing but court costs and much exasperation.

Newspaper Advertising No Good

As for advertising, *all dealers agree that newspaper publicity has no value whatever.* Some American manufacturers make a certain allowance per car for newspaper advertising, but the dealers prefer to have this sum applied to the expense of catalogs and pamphlets translated into Japanese, *which is absolutely essential.* A motor magazine entitled "Jidosha" (Automobile) was published two years ago, but was discontinued after the war began through lack of interest of the subscribers. There is still in circulation a monthly journal known as "Motor," which caters to the dealer, and in this most of the dealers carry space. The very best publicity, it seems, is derived from direct appeals to prospects through the mail and personal calls of salesmen.

Dealers Well Established

All of the dealers mentioned are well established, and doubtless have excellent credit ratings, for most of them have been importing American and English goods several years before they took on the motor car. This latter branch, by the way, is becoming the mainstay of their respective businesses, and without exception they are preparing to take care of the rapidly growing demand for this and succeeding years.

They recognize the fact that Japan, in her aggressive ambition to assume a prominent place among the world Powers, is going to revolutionize every obsolete feature in that country, and that the roads will be the first to receive attention. When this is accomplished, and with the national prosperity to help the cause along, Japan doubtless will be one of the greatest markets for the motor car in the Far East.

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New York Dealers Drop Work for Play

Big Village Motor Boosters Invade "Wag's" Farm for Fun and a Clambake

NEW YORK, Sept. 26—You know the old saying about "all work and no play—" New York dealers believe in it. One day every year they forget all about work, and play, and when they get back they work better.

The day they forgot work this year was to-day. From morn to night they played on Fred Wagner's farm, which is at Smithtown, Long Island, the occasion being the annual outing of the Big Village Motor Boosters. This time more than 175 dealers motored down. Last year the outing was held elsewhere and the crowd was glad to get back to the farm this year.

The principal event this year, and every year, for that matter, is the clambake; and it is a real, honest-to-goodness clambake—clams, lobsters, chickens, sweet potatoes, corn and all.

And to work up an appetite for the bake there were a series of athletic events and two ball games. The whole program was arranged by a committee and prizes were donated by the dealers themselves. Tickets were $5 and they entitled the holder to everything on the program and some things that were not.

Breakfast, consisting of ham and eggs and coffee, was served when the motorcade reached the farm about 10 o'clock. Then the baseball teams took the field. Bill Poertner's Sea Lions—last year they were Poertner's Bayside Burglars—appeared in white duck uniforms and whiskers. (See picture herewith for description.) The uniforms indicated organization and the organization cleaned up the baseball trophy. Poertner's men played first against R. H. Johnston's White Sox—and licked 'em 14-3. The Hill's Staggards challenged the winner and were soundly trounced, 8-1. Here's the line-up:



Fred Wagner, himself

	Sea Lions	White Sox	Staggards
ss.	Newton	Kelly	Reynolds
c.	Studebaker	Braunsworth	Berger
p.	Kuripel	Gillis	Sullivan
1b.	Donnacker	Hill	Allen
2b.	Bastian	Allen	Newton
3b.	Hammer	Sandine	Derks
lf.	Burke	Shay	Johnston
cf.	Kirk	Dickinson	Thorpe
rf.	Bestar	Seymour	Kirt



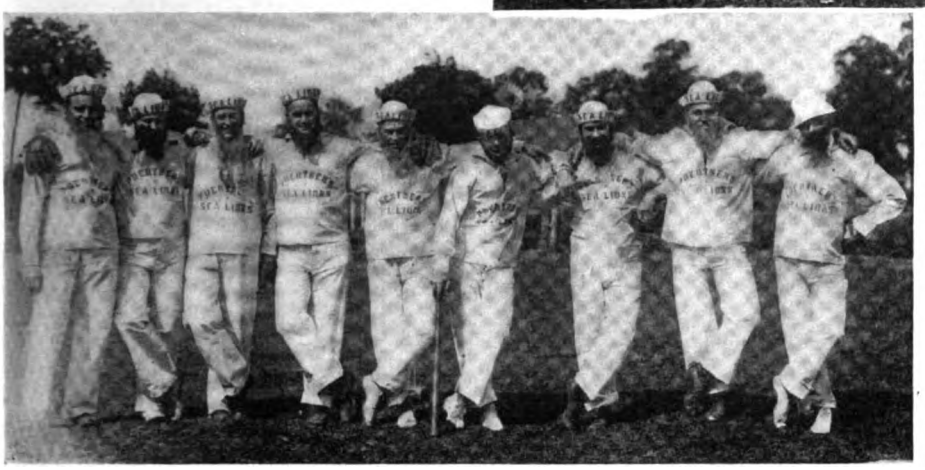
Can't imagine anything much nicer than this, can you? Here's the famous clambake at about the half-way mark and going great guns into the last lap

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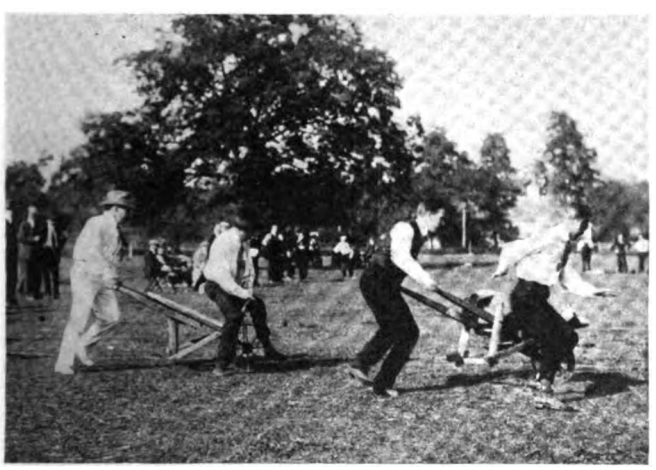
There is not much difficulty in making an engine hit all six, but it is not also as easy to make four legs run like three. Carrol and Buckum, the winners, are at the extreme right



Camouflage is supposed to be French, but Poertner knows all about it. Witness his Sea Lions, who cleaned up a double-header



All Play and No Work (?)



The wheelbarrow race looks easy, but it isn't. One half is easy—the half with the light weight in the wheelbarrow



And here are more so-called lightweights, this time trying to set up a new mark for 50 yards, which no one did, of course



Some dealers have reputations as crabs, but they are not acquired this way. This is the remedy, not the disease



This is another heat—yes, heat is right—of the three-legged race. Everyone seemed to want to take a chance on it

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The game between the Sea Lions and the White Sox was something more than eventful. But perhaps the greatest event was the homer corraled by Newton on balls.

Of the other events the crab race—50 yards backward on all fours—created the greatest amusement. Thorpe ran away with the prize. And the tire-rolling contest was the most strenuous exercise of the day. It's no cinch to roll a 34 x 4 shoe on a rim 50 yards across a plowed field, around a stake and back. Therefore, W. H. Allen's time of 23 seconds is somewhat of a record.

Here is the summary of all the other events:

Crab Race—Won by Thorpe; second, Jones; third, H. Myers.

Tire Rolling Contest—Won by W. H. Allen (23 sec.); second, D. E. Cahill (25 1/5 sec.)

Wheelbarrow Race—Won by W. L. Newton and Joseph Judge (24 1/5 sec.); second, C. F. Seiler and E. T. Atwood.

Fifty-Yard Fat Men's Race.—Won by C. D. Studebaker (6 4/5 sec.); second, J. K. Bastian; third, J. Hoole.

Fifty-Yard Dash.—Won by H. Myers (6 3/5 sec.); second, E. A. Atwood; third, F. B. Sullivan.

Fifty Yards Backward.—Won by C. D. Studebaker; second, B. Devine; third, H. Myers.

High Shoe Race.—Won by W. L. Newton; second, M. Carroll; third, H. P. Baran.

Low Shoe Race.—Won by W. E. Scheffler; second, R. V. G. Miller; third, L. W. Taft.

Three-legged Race—Won by M. Carroll and W. Buckham; second, L. W. Taft and D. E. Cahill.

Sack Race.—Won by J. M. Kirk, Jr.; second, H. P. Baran; third, R. V. G. Miller.

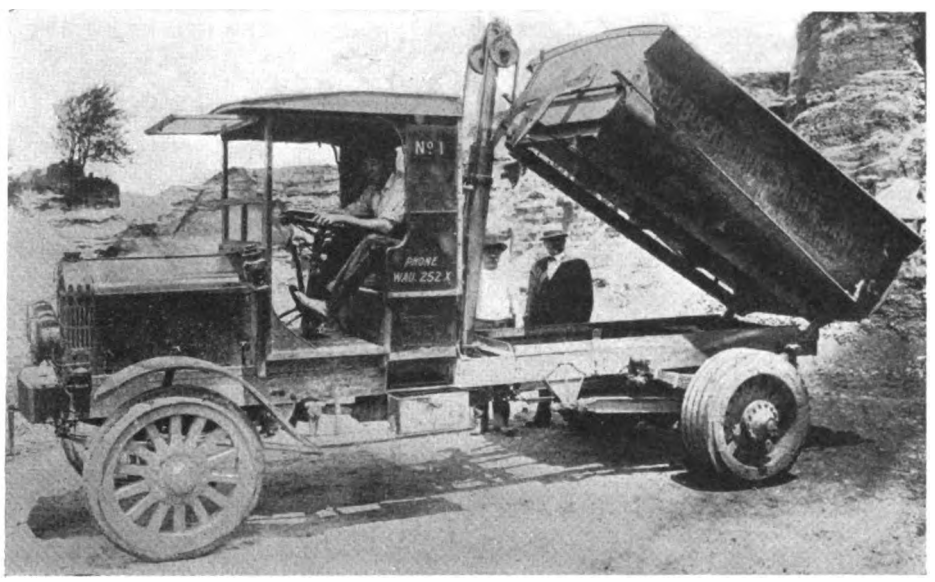
Crab Race—Won by W. R. Thorpe; second, E. Jones; third, H. Myers.

Golf Contest.—Won by E. W. Bonham; second, J. H. Mellish.

Gymkahna.—Won by D. E. Cahill (Ford), 2.02 1/5; second, W. H. Stewart, Jr. (Case), 2.08 4/5; third, W. R. Thorpe (Buick), 2.09.

New Menominee 5-Ton Resembles 3½ Ton

I-Beam Radius Rods Only New Feature—Standard Units Used



New model equipped with hydraulically-operated dump body

A NEW 5-ton worm-driven model, made by the Menominee Motor Truck Co., Menominee, Mich., follows the same general lines in design as the 3½-tonner formerly offered, except in the radius rod construction, which uses structural I-beam rods instead of those of the tubular type. A similar construction is now employed on the 3½-ton model.

The new 5-ton unit follows standard designing practice and is assembled from standard parts made by specialists. The truck has its Continental motor mounted under a hood forward of the dash. The engine has its cylinders cast in pairs with the valves at the left. Water cooling is employed in connection with a centrifugal pump circulating the water through a cast-iron case radiator with vertical finned tubes.

The engine is fed by gravity from a tank under the driver's seat to a Stromberg carbureter. Its speed is goverened by a Menominee-made governor of the centrifugal type, driven from the driveshaft. The ignition is on the single plan, employing a high-tension magneto of Eisemann make. The spark control is hand manipulated. An electric lighting unit employing a Willard battery is furnished as optional equipment, extra.

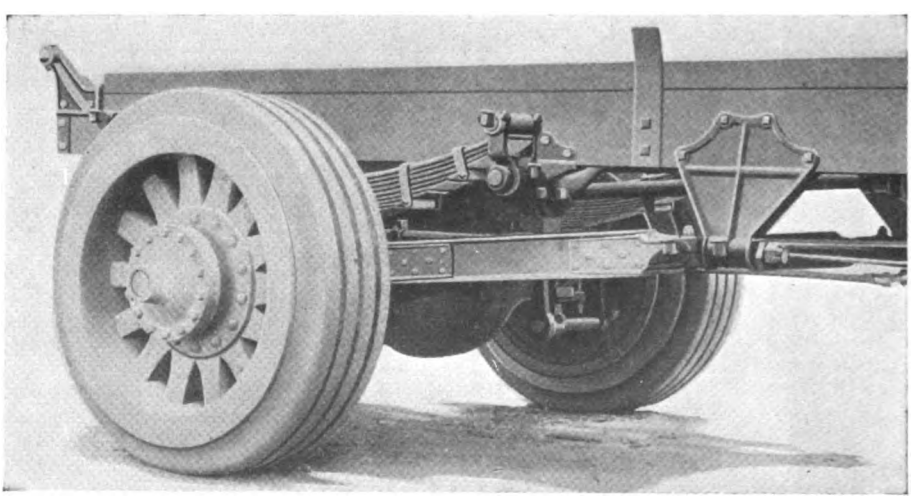
From the motor the drive is taken through a Borg & Beck clutch to a three-speed Cotta gearset of the constant-mesh, individual-clutch type mounted amidships. It is then transferred to the Timken worm-driven rear axle by means of a propeller shaft with two universals. The rear axle is of the floating type and has its springs arranged to take the driving torque, with the propulsion taken through the new type of structural I-beam radius rods already referred to.

The brakes are of the internal-expanding type, both mounted in the same drums on the rear wheels. Each set of brakes is 18 in. in diameter with 3½-in. faces. The frame is of rolled channel steel, put together on the semi-flexible plan.

The wheels are of wood, of the artillery type, and have square spokes.

Fort Wayne Plant for Supreme?

INDIANAPOLIS, Sept. 29—L. Edgar Jerome and Benjamin J. Cline, both of the Elgin Motors Company of Chicago, were in Fort Wayne, Ind., last week negotiating for the location of a factory for the Supreme Motors Corp., which will manufacture motor cars and airplane engines.

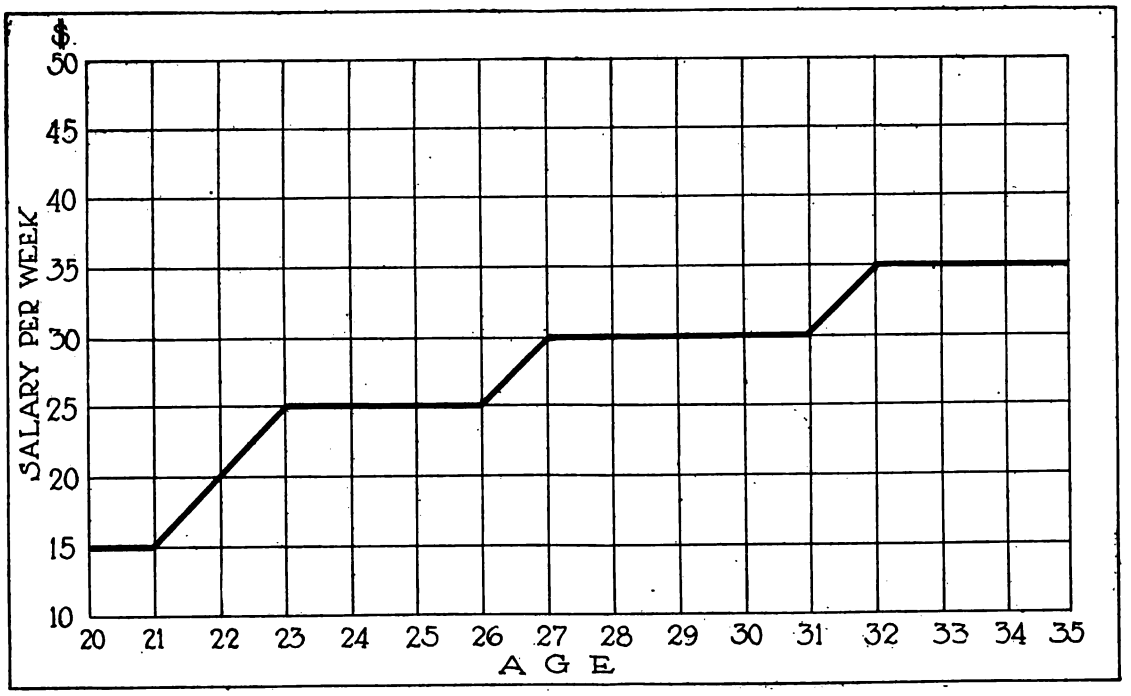


I-beam radius rods are used instead of the tubular type employed on the 3½-ton

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Climbing, Drifting or Slipping?

The Curve of Human Progress



By Ray W. Sherman

THEY switched from business to the war—and back again—and so they chatted on. Reilly and Tommy Trumbull, seated in big chairs before the fire in the association's clubrooms, watched the flicker and whiled away the half hour before the crowd would come for the evening's meeting. A few played pool and a couple of Linden Avenue accessory men quarreled over pinochle.

"Business may change, living may change, everything may change, Tommy," said Reilly. "We are living through a great period. And after all our greatest problem is living—and life. Business is only secondary.

"Too often we keep our eye on other things than those that really concern us most. I wonder how many people ever plotted a curve of themselves to see whether they are going upward, drifting along on a level or still climbing. Did you?"

"No," puffed Tommy.

"It's interesting," said Reilly, and he folded his newspaper on his knee and made a sketch something like that shown above on this page.

"You know," he continued, "we are just like a business, or a department of a business. We gain or we lose. We go ahead or we go backward. We progress or we merely drift.

"Let's divide this chart to cover a man's years from twenty to thirty-five, and let's scale his weekly salary from ten dollars up to fifty. Suppose we assume he was getting $15 a week when he was twenty and that he drew that amount for a couple of years. Then let's assume he became a better man and drew $20 when he was 22. And let us assume he got another $5 raise the next year.

"That means that he made a lot of progress during those two years. But this progress may have been simply because he became a little more skilled. He may have been quite unskilled when he was 20 and 21.

"Then, let's assume he didn't do much for himself for three years except plug away at the job and remain faithful. That would entitle him to another raise simply because of service and loyalty. And in four or five years more he might get another. Then, let us assume that he stays where he is until he is 35.

"Now—look at the chart." Tommy looked at it. "It shows that the man is making steady upward progress—but rather slowly. At the rate he is going he will attain possibly $50 a week before he dies."

"Yes," thoughtfully replied Tommy, "it figures out about that way, doesn't it?"

"Exactly. Now, what is the man going to do? Does he want to make more? I believe he does. How much does he want to make? Maybe he wants $75 or $100 a week or a bank balance of $10,000 or $100,000 or $1,000,000. How is he going to get it?

"If I Am to Make a Million ——

"Does he ever figure this way? I hope to have wealth before I die. I hope SOME DAY to have a lot of money. I dream of the day when I shall be independent. And if he does have dreams like that does he ever look at his chart and figure out how rapidly he is progressing? Does he say: If I am to make a million I must be getting busy. I have only so many years in which to do it. I have made so much progress during the past 5 or 10 years and at my present rate I shall be at only such a point in 10 or 20 years more?

"Does he ever figure this way? If I am to reach the high point to which I hope to attain I must begin climbing right away—and climbing rapidly. If I am to climb rapidly I must figure out a way to climb.

"If he is a salesman does he ever figure this way? I am selling cars and making $30 or $50 a week. The most I can ever make as a salesman is $200 a week, and that is far short of the mark I hope to attain. How then can I go higher? There may be several ways. I can go into business for myself. I can market an invention. What is the best way? And having figured out the best way, does he at once begin working toward that goal?

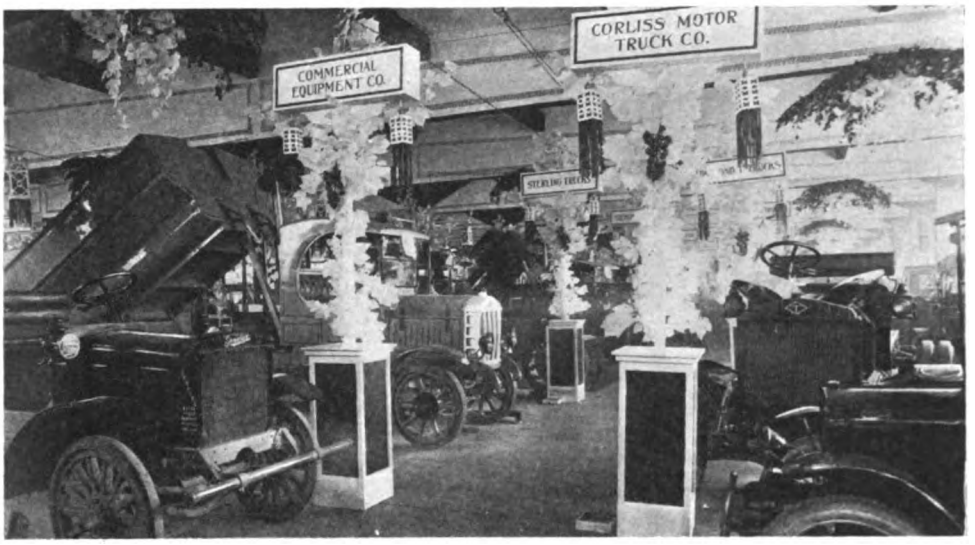
"If he will be satisfied with $200 a week does he begin NOW to figure how to make that amount? Does he realize that he is not now worth $200 or he probably would be getting it? Does he realize that to get the $200 he must go after it?

"I'll say, Tommy, that a study of this Curve of Human Progress will give any one a lot to think about, if a man will take the cold figures for what they're worth and just think seriously."

Reilly hesitated. He thought Tommy had fallen asleep. But he hadn't.

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150,000 Persons Saw This Show



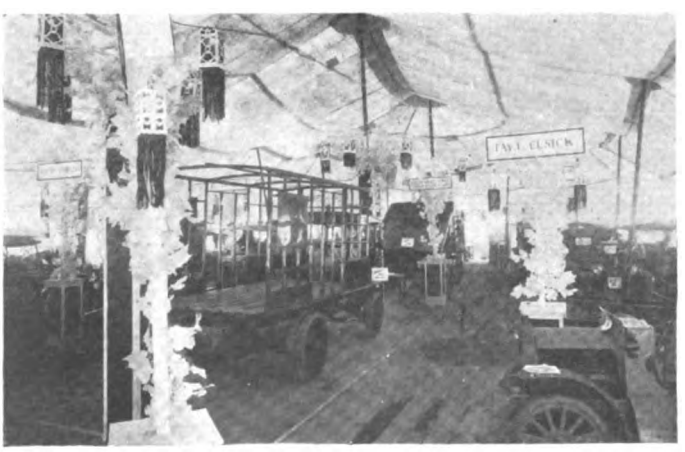
Here is a part of the motor truck exhibit in the main building, where the decorations were just as good as for the passenger car section

MORE than 150,000 persons saw the annual Fall Fair Show of the Milwaukee Automobile Dealers which was held during the week of Sept. 10-15. The show was held in a building and there was an annex under a tent to hold the overflow. No admission was charged for any of the exhibits. The article about the show in Motor World for Sept. 19 said: "As a wholesale proposition, the show is a winner. Every up-to-date dealer in Wisconsin attends. The names which exhibitors are able to list through attendance are, for the most part, gilt-edge prospects."





Aisles were wide and for the most part there was no crowding. The picture at the left was taken in the building and that at the right in the tent, the decorative scheme being the same in both





Here is another view of part of the truck exhibit under the tent, at the left, and a glimpse of some of the truck exhibits in the building at the right

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Coming

October 10

Motor World's Winter Business Number

IT will tell you HOW to make money this winter. It will point the way to profits during the period that for so many is a time of depression and loss. It won't merely tell you to DO certain things. It will tell you HOW to do those things. It will be the greatest HOW number ever issued.

For instance: We all know that during the winter it helps our cash drawer if we dig up certain extra lines of business to take the place of the rush of touring business that keeps us busy in the summer.

We know that there is quite a list of activities that we might take up if we could figure them out. This issue FIGURES THEM OUT.

Then, having figured them out, the issue tells HOW TO DO THEM.

Take the case of selling farm lighting outfits to farmers. Ever think of that as a winter profit maker? This issue thinks of it, and this issue lays down in 1, 2, 3 order the steps you must take. Here is how the issue starts the plan:

1—Get in touch with the manufacturer of a good farm lighting system and get the agency.

2—Scout around the country and compile a list of farmers who are eligible prospects for a farm lighting system.

3—Put these names in a card file for follow-up work.

4—Ask the manufacturer for full information as to all the work that is necessary in installing the system.

5—If you have not an electrician in your employ, get in touch, etc.

6—Fit up a trailer as follows: (Full directions will be given, with pictures.)

Let's skip a few points. Point No. 10 says:

10—Now you're ready. Send this letter to your list so it will arrive at the end of the week. The farmer can read it Sunday.

The issue then writes the letter for you. It tells you what ads to use. It will contain pages of form letters for use in many different kinds of profit-making winter work. It will have pages of advertising copy for you. It will have little sales stories that you can put into the mouths of your salesmen to help them sell more accessories. It will present complete plans for:

1—Finding prospects for all kinds of business.

2—Beating down the prospect's winter and war arguments.

3—Selling inclosed cars this winter.

4—Planning newspaper campaigns, dividing the appropriation—how much to set aside, how to spend it, how to write the copy, and complete directions.

5—How to get the most out of mailing inserts.

6—How to cash in on the Christmas spirit.

7—How to keep your garage full and your shop busy all winter.

8—How to know whether you are making or losing money—and where and how to check losses.

9—How to avoid pitfalls of the law.

These are only a few of the many things in this issue that will help you make money this winter. And this issue goes miles ahead of the ordinary style: It gives real HOW TO DO IT directions. It says: "1, do this; 2, do that; 3, do this," and so on. It works out the complete plan for YOU.

With a view to making this issue of MOTOR WORLD of still greater reference value to readers, we are arranging to include in it the 16 pages of specification tables which appear regularly in the first issue of every month. These include specifications of passenger cars, of motor trucks, and prices of tires and tubes, as well as the electrical equipment on all cars.

Every reader of MOTOR WORLD should watch for this issue, save it so it can't be lost, use its plans all winter, and MAKE MONEY.

Watch for It

If you believe you might need more issues than ordinarily come to you, it is well to get your order in NOW. Last year there was a big after-demand for the issue which could not be supplied because the supply was soon exhausted.

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Repairshop Shortcuts

From The Motor World Roadman

No. 1375—REAR AXLE STAND

The feature of this rear axle stand is that it may be compressed into a small space when not in use, and holds the axle securely when in use, besides possessing the additional advantage that it may be adjusted to accommodate any axle. This is accomplished by means of hinged side members acting in the manner similar to that of a pair of lazy tongs, perforations permitting the stand to be locked in the open position.—C. L. Haughn, Independent Garage, Battle Creek, Mich.

No. 1376—U-BOLT DIE HOLDER

Crossed threads on U-bolts may be straightened by means of a die held in a special holder. This wrench is a piece of pipe fitted with a re-enforcing collar at the lower end and holding the die in the usual manner.—Chas. Marquard, American Motors Co., Battle Creek, Mich.

No. 1377—HYDROMETER CASE

Hydrometers are exceedingly fragile and breakage results in a loss of time as well as of money. By the use of a heavy wooden case especially constructed, the hydrometer is protected at all times when not in use, and may be stored in a handy position on the bench without danger of being broken.—J. F. Walter, Buick Motor Co., Battle Creek, Mich.

No. 1378—TAP EXTENSION WRENCH

It is often found necessary to completely dismantle parts to reach a hole that it is desired to tap. This dismantling can be obviated in many cases by the use of a tap wrench extension, comprising a piece of pipe squared at one end to hold the tap and fit it with a rod handle at the upper end. The squared end of the pipe should be case hardened to promote durability, though in an emergency job this is unnecessary.—Chas. Marquard, American Motors Co., Battle Creek, Mich.

No. 1379—OVERHAULING BATTERIES

The usual method of removing the top covering of storage batteries by means of a torch and heated putty knife is tedious. If the acid be drained from the jars, the terminals drilled and removed from the posts, and the battery placed bottom-side up in a pan of boiling water, the sealing compound is quickly melted, and a slight jar will cause the plates to drop out. The water may be heated by a small gas burner, or by a gasoline torch, and there should be sufficient water to extend about 2 in. up on the side of the battery.—Vesta Accumulator Co., Chicago.

No. 1380—FORD ENGINE KINKS

When tightening the rear connecting-rod bearing on Ford engines, care must always be taken to prevent dropping one of the bearing nuts down into the flywheel case—and even then occasionally a nut will be dropped. This can be prevented by blocking the passage into the crankcase with a padding made up of cotton waste wrapped in burlap. After the completion of the work, this pad may be readily drawn from place.—James Baldwin, New Harmony, Ind.

No. 1381—JOB CARD FILE

In the smaller shops a systematic method of holding job cards is provided by means of a sheet metal file divided into compartments, each compartment holding the work card of an individual workman. This file is hung on the wall over the workman's desk, and in addition to keeping the cards instantly available prevents loss or soiling.—S. Rathburn, American Motors Co., Battle Creek, Mich.

No. 1382—SPINDLE BUSHING REMOVER

The bushings on Ford steering gear spindles may be quickly removed by means of a threaded punch that is screwed into one of the bushings from the bottom and extends upward through the other bushing, permitting the first bushing to be driven out. The remaining bushing may then be easily driven out with a common punch. The threaded punch resembles a tap, and is a piece of round stock, threaded, cut to tap form and then case hardened.—J. F. Young, United Motor Co., Reo dealer, Battle Creek, Mich.

No. 1383—SLEWING CASTORS

In crowded garages and repairshops, slewing castors are almost a necessity in moving cars to and from the stalls. Two castors are required, one beneath each of either the front or rear pair of wheels. A steel track is supported on a triangular steel framework that is riveted together, and carried on three pivoted iron wheels. The wheels of the car are readily run into this track, permitting the car to be slewed to any desired position.—Delco Service Station, New York.

No. 1384—REPLACING SPINDLE BUSHINGS

Ford spindle bushings may be quickly replaced without injury by the aid of a special punch that is turned down to carry the new spindle, and having a shoulder that permits the bushing to be driven into place. As the shank of the punch passes through the center of the bushing, it prevents the bushing from being squeezed out of shape, and the lower end acts as a guide that holds the bushing in line with the spindle hold.—J. F. Young, United Motor Co., Reo dealer, Battle Creek, Mich.

Factory to Send Cars Under Own Power

LOUISVILLE, Sept. 29—Automobiles will be shipped from the factory to the dealer under their own power over the railroad tracks, if the plan of Lee Miles, president of the Southern Motors Co., Packard, Hudson and Dodge distributer, is carried out. Miles' plan is that motor cars at the manufacturing plants be stripped of their demountable rims and tires, fitted with flanged wheels and then sent to the point of destination under their own power in trains of from twenty-five to fifty over existing railroad rights of way. He believes this will help solve the nation's transportation problem.

Chevrolet Engineers in New York

FLINT, Sept. 29—The Engineering Department of the Chevrolet Motor Co., formerly with the Mason Motor Co., Flint, Mich., is moving to New York, and will be located at 618 West 56th Street.

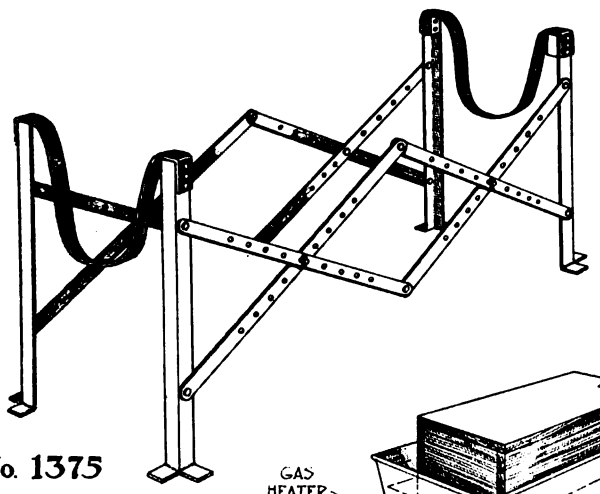
Olympian Buys Meridian

DETROIT, Sept. 26—The Olympian Motor Co., Pontiac, has bought out the Meridian Mfg. Co., Indianapolis, which makes bodies, and will move everything to Pontiac and manufacture its own bodies. It will turn out 20 per day.

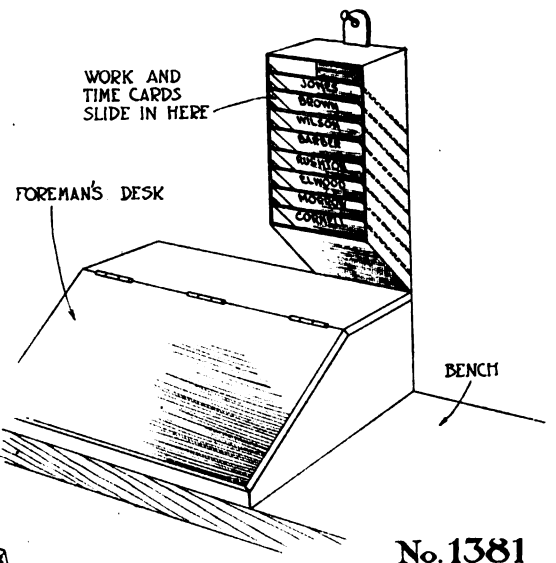
Kerosene Carbureters for Ford

DETROIT, Sept. 26—Holley Bros. have received a cable order for 5000 kerosene carbureters from the Ford Motor Co., Manchester, England. This order was placed as the result of 200 kerosene carbureters shipped during March and April and tried out by the British Ford owners.

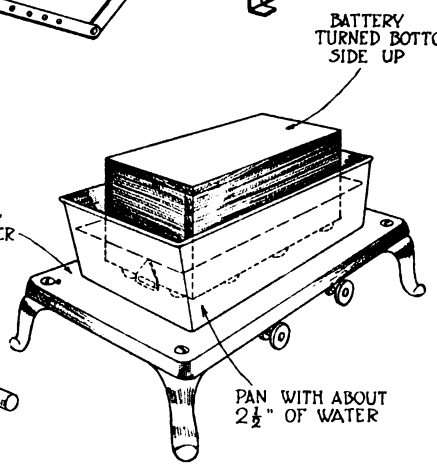
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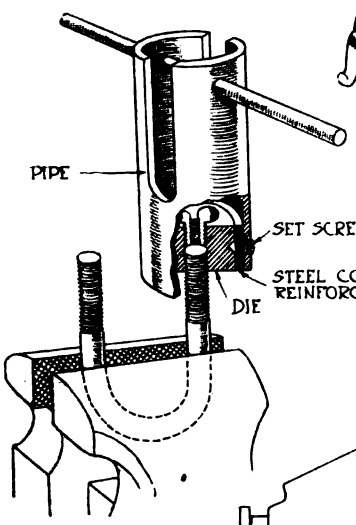
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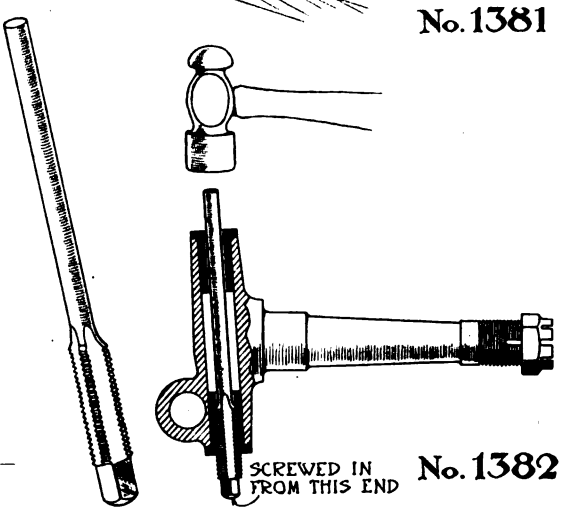
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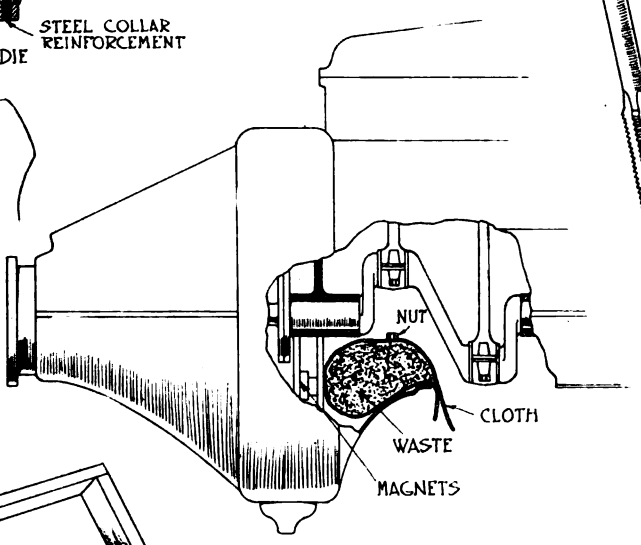
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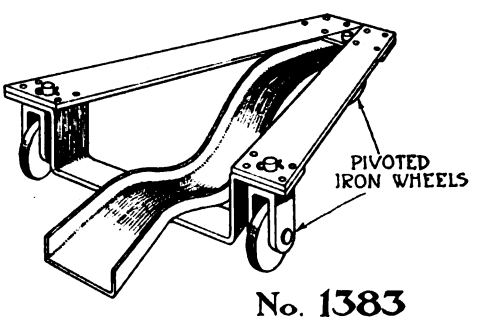
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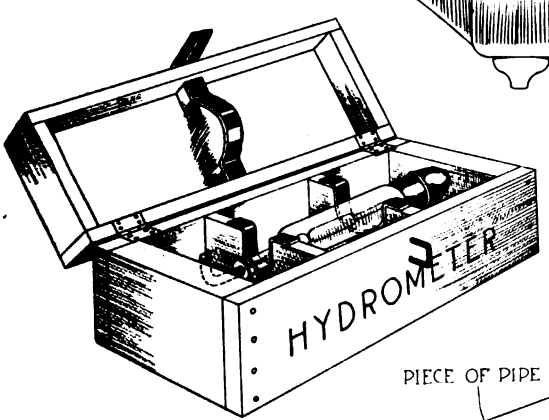
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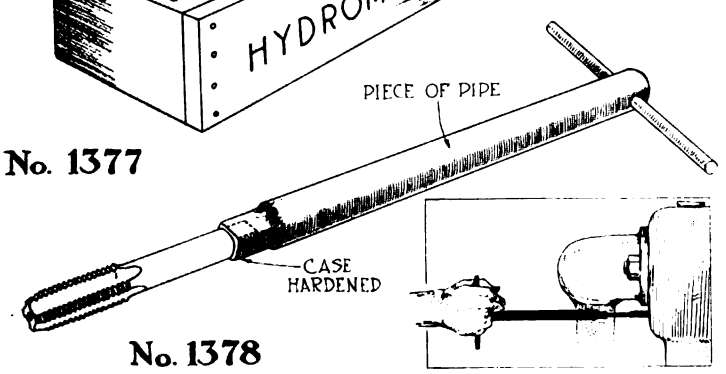
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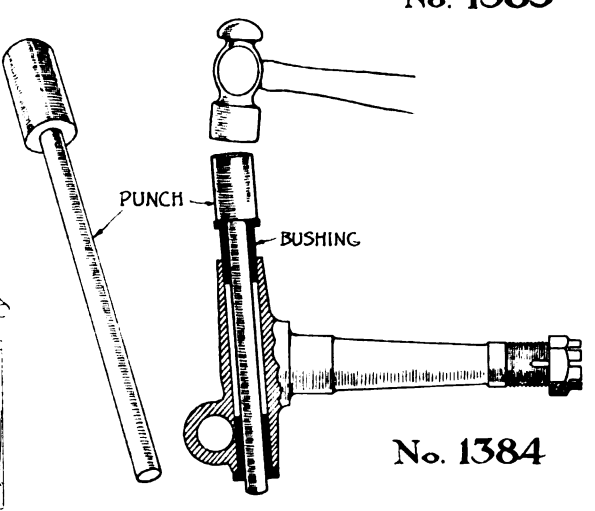
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A Department of

BETTER MECHANICS

No. 42

To Remove Endplay from the Liberty Crankshaft

This Method Applies Also to the 7-W and 7-K Continental Engines

Removal of endplay in the crankshaft of many engines usually necessitates tearing down of the engine. This is not necessary with the Continental engine of the type used in the Liberty cars, or with the Continental engines of the 7-W and 7-K type.

By S. Thornton Williams

Indications of Endplay

WITH the engine idling a slight bump is heard when the clutch is thrown in and out, and a knock or pound at higher speeds.

To Remove Endplay

1—Drain the radiator and remove the hood.

2—Remove the radiator.

3—Remove the fan belt and swing the fan on its bracket up out of the way.

4—Remove the fan pulley on the end of the crankshaft.

5—Remove the gear cover case.

6—Crank the engine until the marks on the timing gears are in line.

7—Remove the starting crank stud screwed into the end of the crankshaft.

8—Remove the crankshaft gear. The face of this gear is drilled and tapped for the use of the puller illustrated in Fig. 1

9—Several shims are placed between the back of this gear and the shoulder on the front end of the crankshaft. These are shown in Fig. 1, and by removing the correct number of shims the gear may be drawn up tight against the thrust bearing, removing the endplay. Therefore estimate the number of shims necessary to be removed; remove them and replace the gear and starting crank stud, fastening it tightly in place. If endplay is still present remove more shims.

10—Replace the gear case cover, fan pulley, fan belt, radiator and hood and refill radiator.

CLUTCH ADJUSTMENTS

A BORG & BECK clutch is used in the Liberty, and the adjustment and care of all clutches of this type were described in the Jan. 10 issue of Motor World. However, as clutch adjustment is of prime importance, and as the pedal linkage of the Liberty is distinctive, the following is not repetition. In general, it may be applied to all Borg & Beck clutches.

Evidence of Needed Adjustment

1—A dragging clutch, causing clashing gears.

2—A slipping clutch.

3—Failure of the clutch release thrust bearing to stop spinning when the clutch is engaged.

The clutch may be washed out with gasoline after removing the cover plate and loosening the clutch flange retaining bolts. *These bolts should not be loosened more than one-quarter turn.*

It is possible to wash the clutch after removing one of the adjusting screws and pouring ½ pint of kerosene into the clutch housing. The adjusting screw is then replaced and the engine run for about 15 minutes. The front end of the

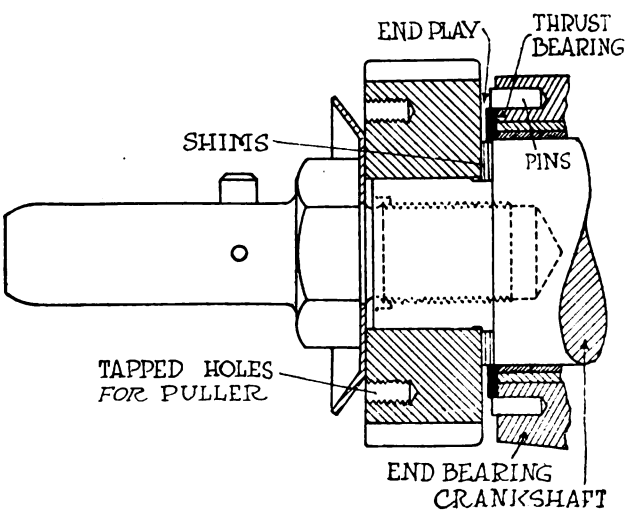
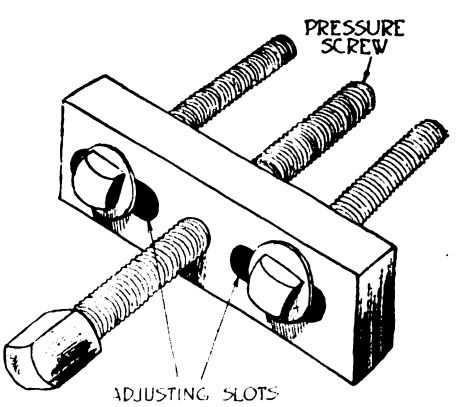
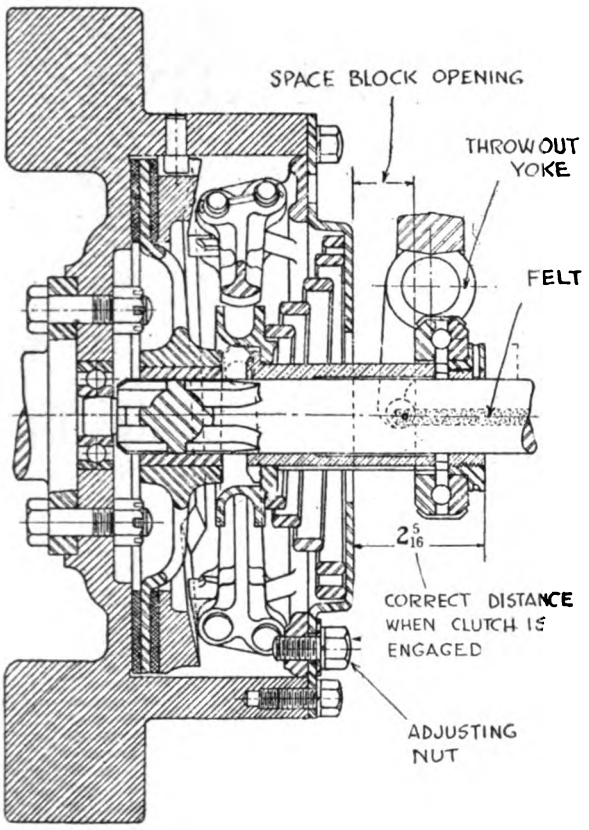
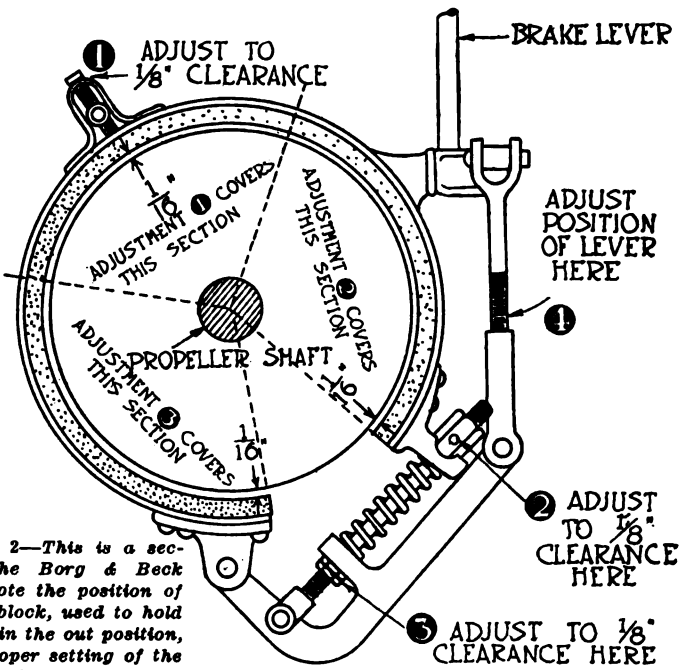


Fig. 1—Endplay in the crankshaft is removed by taking out shims between the crankshaft shoulder. This permits the gear to be pulled up against the thrust bearing



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Left—Fig. 2—This is a section of the Borg & Beck clutch. Note the position of the space block, used to hold the clutch in the out position, and the proper setting of the clutch.

Right—Fig. 5—Adjustments on the emergency brake should be made in the order indicated above. The clearance is greater than that usually used in brake practice

car is then jacked up about 9 in. from the floor, the adjusting screw removed and the opening turned to the bottom, and the clutch allowed to drain over night. After washing adjustment should be made.

1—Release the clutch and lock it in the "out" position by placing a block of wood 1 13/16 in. high and 4 in. long between the cover and the throwout yoke. See Fig. 2.

2—Loosen the two adjusting bolts, shown in Fig. 3, about three turns.

3—To tighten the clutch tap these bolts about ⅛ in. around in their slots and then tighten them up. To loosen, tap the bolts in the opposite direction. If the bolts come to the ends of the slots remove the bolts and set them back into the "repeat" holes at the opposite end of the slots.

4—Let the clutch in. If the distance between the back of the ball thrust bearing screw and the face of the clutch is less than 2 5/16 in. loosen the adjusting bolts again and tap them back until this is the case.

5—Note whether the clutch pedal rides the toeboard when the clutch is in. There should be a clearance of ⅛ in. between the pedal arm and the underside of the floorboard, as shown in Fig. 4. If this is not the case, it may be obtained by either turning the pedal adjusting screw in or out.

6—Note whether the pedal has about ⅜ in. play before it starts to throw the clutch out.

This is necessary to remove the pressure from the clutch throwout yoke bearing, and if the clearance is not present the bearing will rotate at all times. The adjustment should be made to bring about 1/16 in. clearance between the clutch throwout yoke and the thrust bearing when the clutch is engaged.

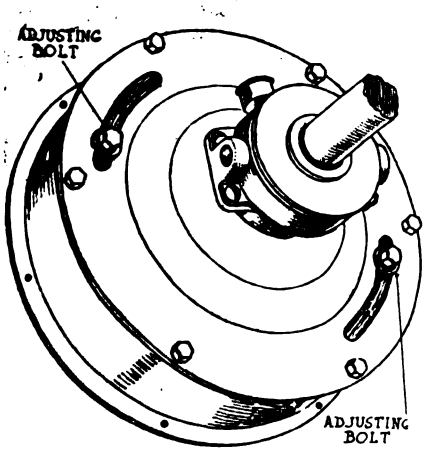


Fig. 3—The clutch is tightened by loosening the slot bolts in the housing cover, and tapping them about ½ in. in a clockwise direction. The throwout yoke should not ride the thrust bearing when the clutch is engaged

Brake Adjustments

THE emergency brake is mounted on the propeller shaft, at the rear of the gearbox, and because of the system of lever linkage employed, *the band must be given more clearance from the drum than is the ordinary practice.*

1—With the brake in the "off" position, adjust the hanger screw, marked (1) in Fig. 5, until there is 1/16 in. clearance between the band and the drum beneath the hanger.

2—Tighten or loosen the adjusting nut marked (2) until there is 1/16 in. clearance between the right half of the brake band and the drum, as shown in Fig. 5.

3—Tighten or loosen the adjusting nuts marked (3) until the 1/16 in. clearance is registered between the band and the drum.

4—Remove the pin fastening the yoke and turnbuckle to the brake lever, and set the turnbuckle so that the 1/16 in. clearance is maintained all around the band when the brake is in the off position.

Service Brake

All ordinary adjustments of the service brake may be made by simply tightening or loosening the turnbuckle of the single brake rod beneath the floor boards.

However, the bands on the rear wheel drums should have 1/32 in. clearance from the drum all the way around when the brakes are in the off position.

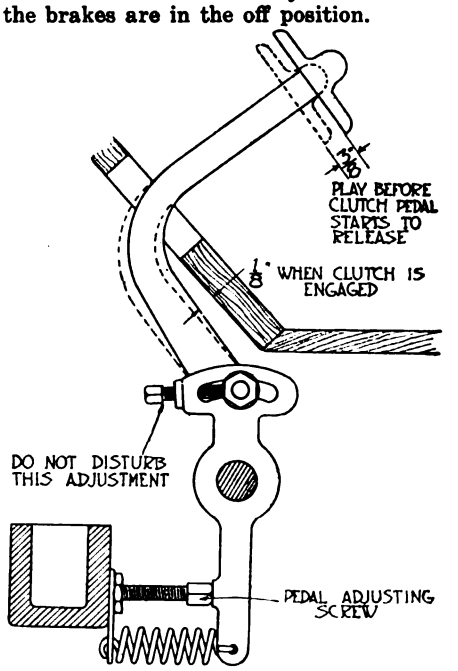
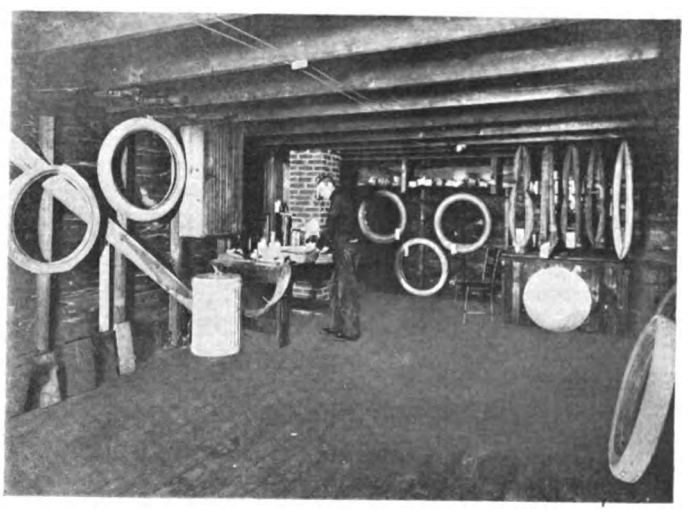


Fig. 4—It is essential that the clutch pedal does not hang on the toe board when the clutch is in, and that the pedal have about ⅜ in. play before starting to throw the clutch out.

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Above—The accessory department carries a complete line of supplies. Right—Where tires and inner tubes are vulcanized

Business Is

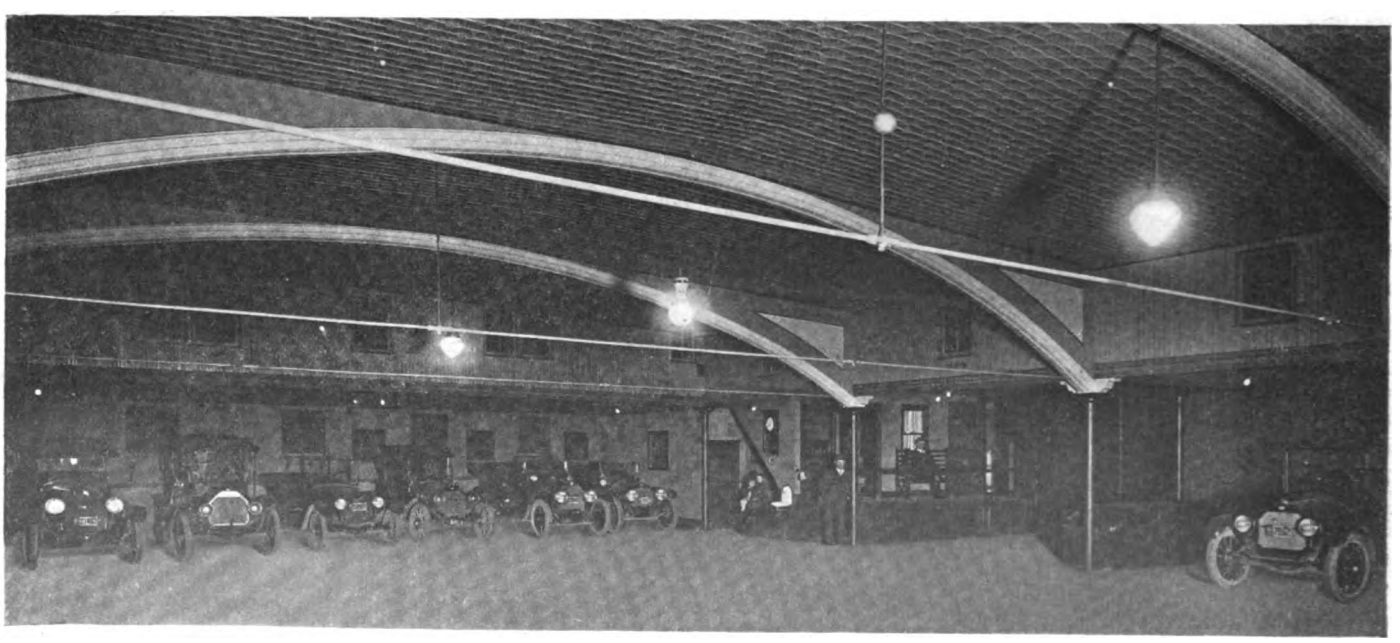
Whether It Be Lumber, Builders' Garage, the Same

BY the application of the same principles that brought them success in the lumber business, E. M. Long & Sons, Cadiz, Ohio, have established a garage that is the model of its community. These principles, three in number, are simple. They are cleanliness, order and system.

This garage is practically 100 ft. square, fireproof with brick floor, tile walls and ornamental steel ceilings, giving a storage capacity for 75 cars on the main floor. The second floor is supported on arched trusses, doing away with posts, leaving the central portion of the floor clear for the movement of the cars.

On the ground floor, at the right of the main entrance, is the ladies' restroom, with open grate, and hot and cold running water. This is a convenience not to be found in many garages, and one that should be incorporated in every garage construction. It is plainly but comfortably furnished with wicker furniture and there are magazines to help pass the time when waiting for a car.

The general offices are located at



A partial interior view of the garage. It is about 100 ft. square, with brick floor, tile walls and steel ceiling. 75 cars may be accommodated

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BUSINESS

Supplies or Mill Work, or a Principles Govern All

the right of the main entrance; at the left the accessory and supply department. In this department a complete line of tires, supplies and accessories is neatly arranged and attractively displayed. Dealers' display cards and advertised goods are placed where they can be seen, and the show window is so placed that every car must pass it on entering.

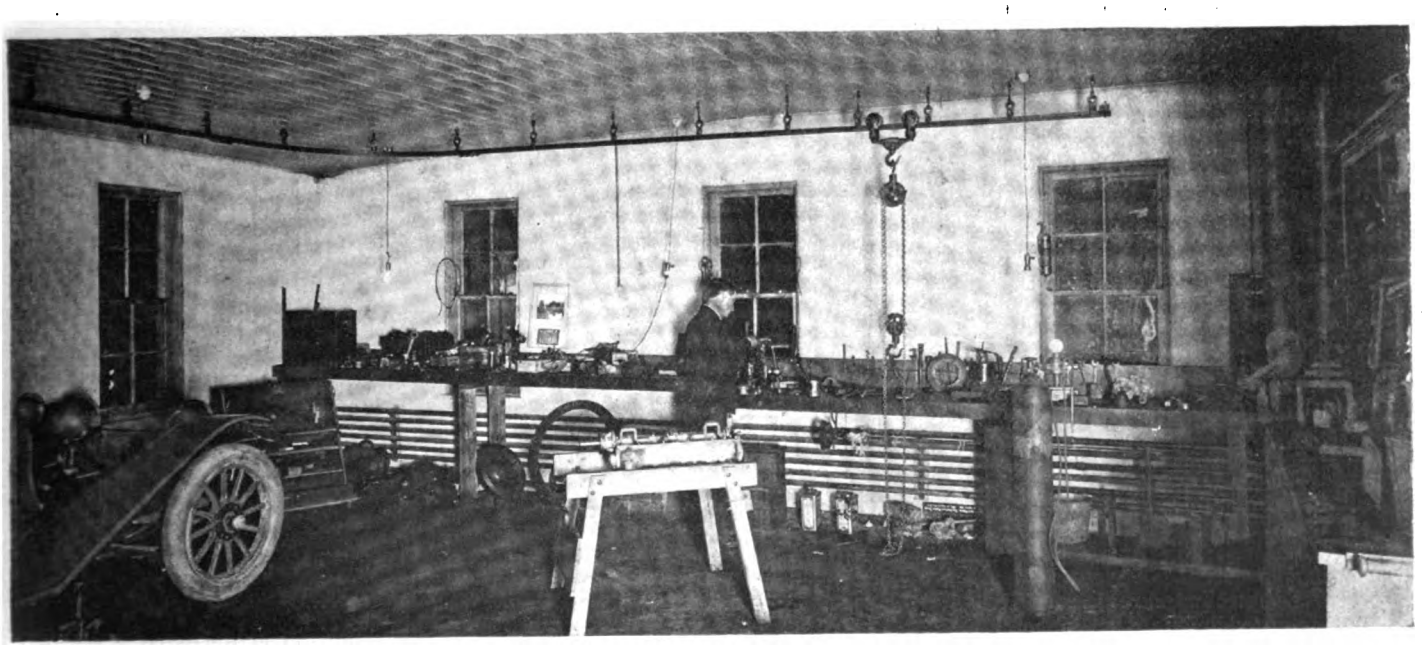
On the second floor are found the repairshop, vulcanizing department and battery charging outfit. These departments are in charge of competent mechanics, and, as will be seen from the photographs, equipped to do repair work of any nature. There is a chain hoist suspended on a monorail from the ceiling running around the walls of the shop so that it is a simple matter to lift out an engine and transport it. The chain hoist may also be used for jacking up cars. A simple wood horse is used for a motor stand.

Due to the large volume of business done by the complete organization, supplies are bought in quantity. As an example of this, gasoline is purchased in straight car lots of 8000 gallons for local distribution.





Above — Another view of the accessory and supply room. The stock is well arranged and classified. Left — The ladies' rest room is a feature that should be in every garage



The equipment of the repair shop is modern in every respect, and is in charge of a competent mechanic

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Heat Controlled in Holley Kerosene Vaporizer

One Float Chamber for Gasoline and Kerosene—Change Made in Few Seconds

ONE of the most important points brought out at the recent tractor demonstrations at Fremont, Neb., was the fact that not all manufacturers have succeeded in grasping the principles underlying the successful use of kerosene. In view of the fact that the Holley kerosene carbureter as used on the Ford tractor has been in use in small numbers on two different types of motor covering a period of 2 years, some of the underlying features of this device will be of interest.

As a result of the performance of this instrument during the experimental period, about 15,000 are now in process of manufacture. The British Government after having made a series of tests on different types of instruments has specified this vaporizer on four different tractors, and a factory has been built in Coventry to take care of the production in Europe of this vaporizing system. The Ford tractor is the only American-made tractor of the four, the other three being British types.

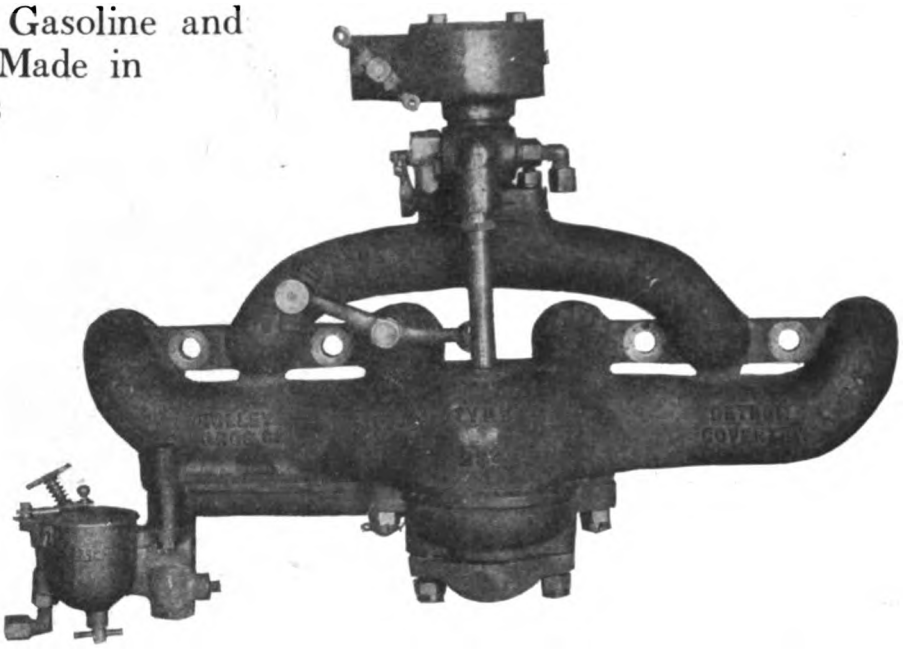
Heat Is Regulated

Probably the most notable point of departure of this system as compared with others is the method of shunting the heat, which enables the efficient use of the different fuels under different temperatures.

Another point which should be noted in the Holley system is the use of the thin-walled brass tubing for vaporizing the fuel. This is made as light as it is commercially possible to obtain it, and by means of the rapid flow of heat possible through and around this thin tubing it is possible to use one float chamber and to shift from gasoline to kerosene in from 15 to 30 sec. after starting.

It has been the experience of the Holley company that slight alterations in engine design are necessary for the use of kerosene. The compression can vary from 45 to 70 lb., according to the efficiency of the radiator. On the average engine a compression of about 55 lb. is best for kerosene.

While the system is constantly being improved as to brake horsepower, at the present time there is a loss of 11½ per cent in maximum output, as between the standard gasoline carbureter and the kerosene carbureter. On the other hand, the pounds of fuel per brake horsepower hour in actual use is generally a little better with the kerosene vaporizer than it is with the gasoline carbureter. The factors recognized in the drop in horsepower are approximately 7 per cent, due to slightly lower compression, and 4½ per cent because of the higher mixture temperature.



The Holley kerosene vaporizing system has only one float bowl for both kerosene and gasoline, and there is a valve for regulating the temperature at which the heating coil is maintained

Regarding the uses of water injection, it has been found that in service the result is to provide a cooler engine and one which does not show the effects of carbon so readily.

Manifold May Be Long

The primary principle behind the design of the Holley kerosene vaporizing system is that it is possible to handle kerosene efficiently once it has been completely vaporized beyond the point where there is any tendency for it to collect.

Experiments conducted by the Holley company bear out the fact that once the kerosene has been thoroughly vaporized and mixed with a sufficient quantity of air to take the vapor by means of heat applied in the proper manner, it is possible to carry the charge several feet without experiencing condensation.

The Holley carbureter puts kerosene into the proper vaporized condition by mixing it with the correct percentage of air to take care of the kerosene vapor after it has been formed, and by means of heat applied in a progressive degree converts this primary mixture of kerosene and air into a mixed vaporous condition.

The farmer using a tractor, or the truck driver, or any of the other members of industries not closely allied with the automotive trades, have a very reliable check on the performance of the kerosene vaporizing systems in the simple expedient of watching for smoke. The smokeless combustion of kerosene is wrapped up very intimately with the perfected vaporization of the mixture. A mixture which collects before combustion is a smoke producer, one that enters the cylinder in a vaporous or semi-gaseous condition will not smoke. The fact that the Holley vaporizer used in connection with the Ford tractors during the experimental period which has been going through on these machines work without producing smoke is illustrative of the advantage of a complete prevaporizing system.

Only One Float Chamber

On the particular type to be described there is but one float chamber, and this is for kerosene. The gasoline for starting is admitted by means of a mixing valve or jet which is only in operation for a short time and which corresponds very closely to the choke tube used on gasoline carbureters for starting purposes. The kerosene enters the float chambers and is controlled by means of an ordinary type of float mechanism.

From the float chamber the kerosene passes through an orifice controlled by a needle valve to the top of the jet, where it is atomized by approximately 10 per cent of the total air required for combustion. This action of atomizing is done by the ordinary type of spray nozzle, the air being induced by the suction of the engine.

The mixture of atomized fuel and air is then drawn through the vapor tube (A) situated in the heater chamber of the special exhaust manifold (B), where the fuel is vaporized in its passage through the coiled tube. The relatively rich mixture is heated progressively higher in

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temperature in its passage through the vapor tube, and by applying the heat at progressive stages, deposits due to decomposition products are avoided.

The temperature of the rich vapor can be regulated by means of the shunt valve (C) controlled by the lever (D), whereby more or less of the hot exhaust gases can be caused to come into direct contact with the vapor tube, thereby compensating for variations in fuel or operating conditions, such as a cold, wet day and a dry, hot day.

From the heater chamber the vapor tube issues and is connected through the shifter valve (E) to the venturi tube situated in the mixer chamber (F).

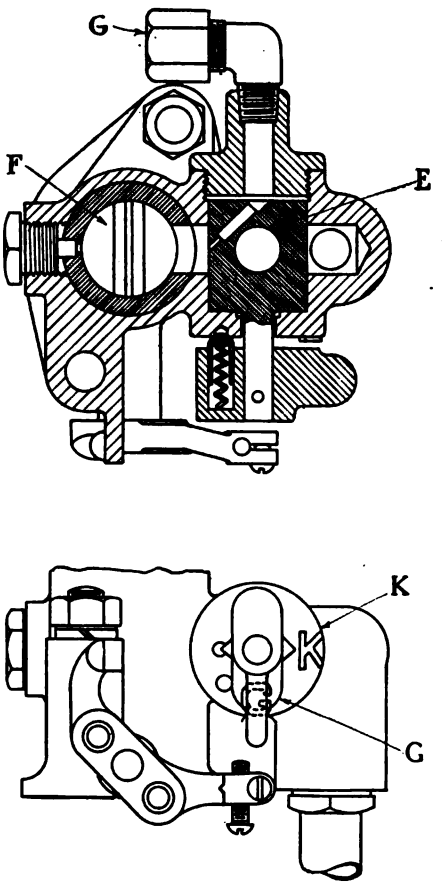
Cold Air Dilutes Mixture

At the venturi tube the rich vapor is diluted with the additional relatively cold air required to form a combustible mixture. In other words, this is the point where the action of the ordinary carbureter is paralleled quite closely, with the exception that instead of gasoline, and air being mixed, a relatively rich mixture of fuel plus 10 per cent of the necessary air is admitted in place of the fuel alone, and in addition the other 90 per cent of the air required is supplied. The additional air required is admitted through a special form of air valve which governs the air admitted in accordance with the throttle position and requirements of the engine.

After the mixture of rich vapor and cold air has taken place the combined mixture passes the throttle into the inlet manifold and thus enters the engine.

The shifter valve (E) performs a double function. In one position it serves for starting purposes using gasoline as fuel, at the same time closing off communication between the vapor tube and the mixer chamber. It is to all intentions a simple two-way valve which, in one position, allows the suction of the engine to fall on the starting generator in communication with the gasoline reserve tank, and in the other position is in communication with the coil vaporizing tube above described.

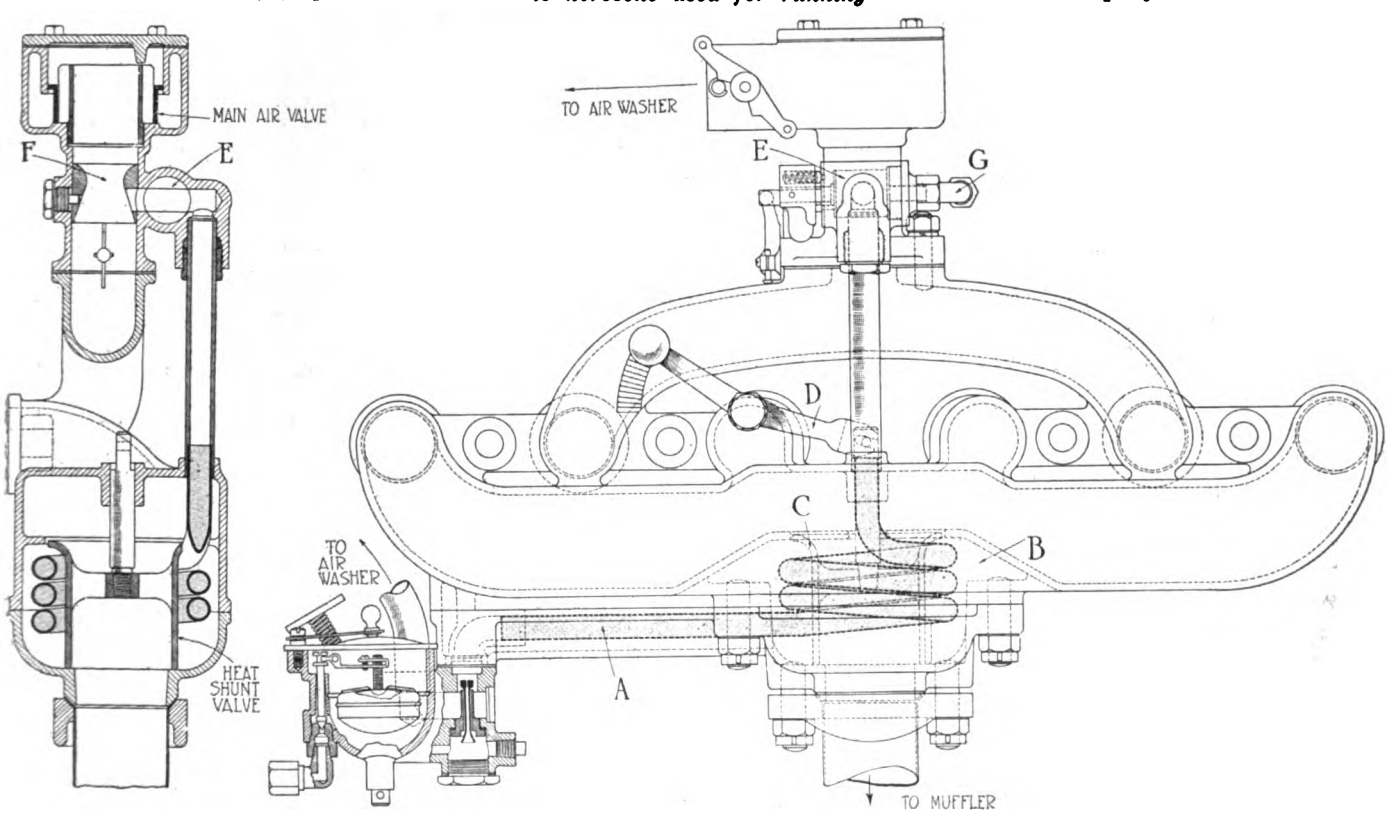
The gasoline for starting is supplied from a small auxiliary tank connected with the connection (G) on the shifter valve housing, passing through the valve into the venturi tube, where it meets the air induced by the suction of the engine in its passage into the intake manifold. The regular running position is, of course, provided when the shifter valve is turned to allow direct communication with the coil vapor tube.



Sectional view through two-way valve, showing how change is made from the gasoline used for starting to kerosene used for running

Thompson Heads Martin Airplane

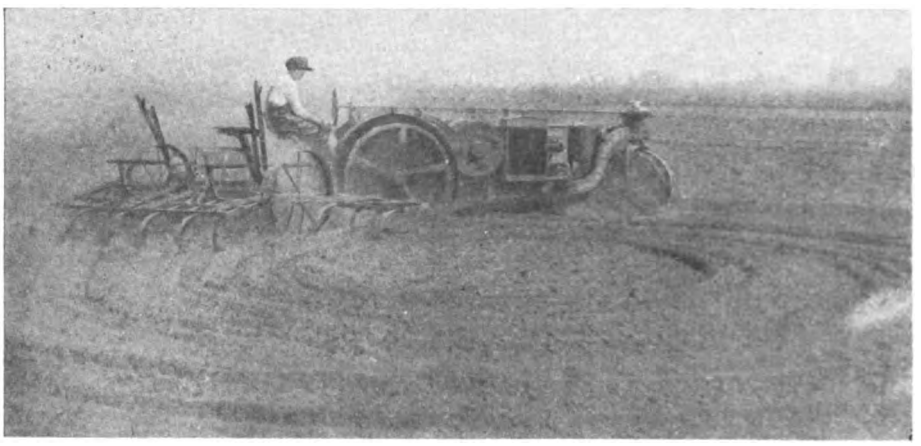
DETROIT, Sept. 26—The Glenn L. Martin Airplane Co., Cleveland, at a stockholders' meeting yesterday, elected the following officers and directors: President, C. E. Thompson; vice-president and general manager, Glenn L. Martin; treasurer, S. L. Mather; secretary, C. M. Osborne. Directors include W. D. Mather, C. E. Thompson, Glenn L. Martin, S. L. Mather, C. M. Osborne, Charles W. Bingham, M. C. Johnson, Alva Bradley and W. C. Turner. President Thompson is also president of the Steel Products Co., but his new position will not necessitate his resignation from the steel company.



Section through the Holley vaporizing system for kerosene, showing the method of conducting the primary mixture through the vaporizing coil and the method of controlling the amount of heat used to vaporize the primary mixture

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Tractors Draw 75,000 Californians



Forty Models on Exhibition—Every Variety of Farm Implement Displayed

Demonstration Huge Success

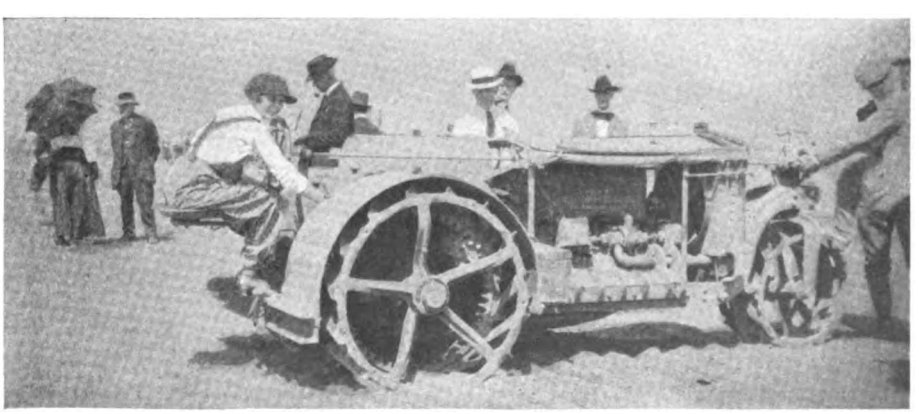
Left—The dust was so thick that it was necessary to follow the machines and scrutinize their operation closely. Below—The soil was California adobe and broke up into clods 2 ft. in diameter, making a real test



LOS ANGELES, Sept. 29—The second annual demonstration of the Traction Engine and Implement Dealers' Association of Southern California closed here Sept. 22. Five days were devoted to the event. There were approximately 40 different models of tractors on display and the attendance totaled more than 75,000. On one day there were more than 4000 motor cars parked on the field and three stage lines were operating in addition. The field was only half an hour's ride from the city and easily accessible. From the standpoints of attendance and sales, exhibitors said the demonstration surpassed anything of the kind ever held in the West.

In many ways, the demonstration recalled the methods of the Eastern county fairs. There were about 25 tents of all sizes scattered about on the grounds. The Vail ranch, where the event was held, contains 650 acres within four lines of fence, so there was room enough for all. In the main exhibit tent there was almost everything from music boxes and refrigerators to 5-ton trucks. Almost every variety of farm implement was on display, and for the interest of the women, who attended in comparatively small numbers, there were demonstrations of household efficiency. One farm implement dealer enlivened things in his tent through the medium of half a dozen negro ragtime singers and dancers.

The dust was shoe-top deep and the white skirts and hosiery of the women were made to look like khaki after a few hours. Sprinkling wagons were kept busy about the tents and on a stretch bordering the plowed field. When the tractors were at work, however, it was necessary to follow them in order to scrutinize closely and if some of the enterprising pump exhibitors had only arranged for a few bath tubs as a part of their display they would have more than made expenses.



Is there anything beyond the prowess of the modern woman? Here is one demonstrating her skill in manipulating one of the machines

A novelty was the employment of girls and young women as tractor drivers. Some of these showed surprising skill in the manipulation of the machines. All wore bifurcated costumes—some just ordinary overalls, and managed to keep the plows true to the furrow with as much dexterity as would have resulted from following a horse plow all their lives. When not showing how easily it could be done or posing for the photographers the young ladies busied themselves by serving lemonade, which was supplied free and in copious quantities.

The soil was California adobe and had not been dampened since the rains of last spring. It broke up into huge clods 2 ft. in diameter and made a real test. The crowd was quick to note which tractors dragged their plows without difficulty and which ones bucked repeatedly. The inability of several types to exert full power when the engine speed was slowed down by resistance was one of the chief subjects of comment by the gallery.

The demonstration was limited almost solely to plowing. There was no opportunity to show the diversified uses of the tractor. Salesmen had photographs of other lines of work being done in other places, but nobody seemed to have thought about operating a hay baler, chopping fodder or putting the machine to any similar use.

Distillate was used as a fuel almost.

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exclusively. In California, kerosene is only about one cent a gallon cheaper than distillate and not as satisfactory a fuel. There was practically no trouble on account of carburetion and it is to be said to the credit of the tractors that it was very seldom an adjustment even was necessary.

Judging from the size of the crowds that followed them, interest lay chiefly in the work of the open wheel and track layer types of machines.

Only 2 hours each day were devoted to so-called public demonstrations. These were from 2 to 4 o'clock in the afternoon. The tractors may be said to have put in 10 hours of work, however, as they were busy from 8 o'clock in the morning until noon and from 4 to 6 o'clock p. m. making private tests. These were arranged for at request in about the same way that an automobile is shown.

It was only such work as plowing and harrowing though, and the practicability of the tractor for other lines of work to which it might be made available on the farm remains to be shown.

How the tractor will assist in solving the labor problem, reduce cost of horse maintenance, increase acreage farmed with same equipment and insure larger yields are some of the points wherein the Southern California demonstration failed to submit the evidence. It is doubtful if a dozen horses will be sold next year, because the farmer has learned they are no longer needed and has supplanted them with a tractor. More tractors will be sold, that is true, but not because the horse has had his day.

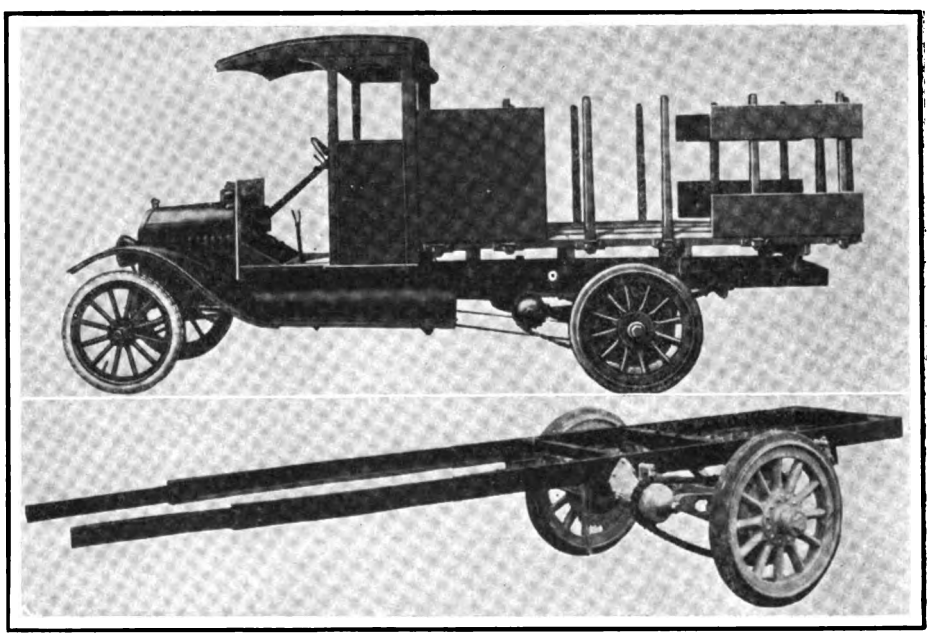
Included among the exhibitors were: International Harvester Co., W. L. Cleveland Co., Wm. Gregory & Sons, Samson Sales Co., Smith Form-a-Truck Sales Co., California Moline Plow Co., California Implement Co., Dauch Mfg. Co., Holt Mfg. Co., C. S. Anthony, Bean Spray Pump Co., C. L. Best Gas Traction Co., L. A. Auto Tractor Co., Arnott & Co., E. P. Bosbyshell Co., Dixon & Griswold, A. F. George Co., Killefer Mfg. Co., Freedlund Co., Hughson & Merton, Union Tool Co., Owen Magnetic Sales Corp., Lichtenberger-Ferguson Co., Cambria Springs Co., Weinstock-Nichols Co., California Readycut Bungalow Co., Fairbanks-Morse Co., Standard Oil Co., Valvoline Oil Co., Pacific Auto Sales Co., Whiting-Mead Co., Nelson-Price Co., Keaton Tire Co., Oldsmobile Co. of California, Republic Motor Truck Co., M. S. Bulkley & Co., Studebaker Corp., Panama Lubricating Oil Co., Splitdorf Electrical Co., International Mack Corp., Pearl Motor Car Co., Duke's Oil Engine & Distillate Co., United Motors Co., Four-Wheel-Drive Truck Co., Warren Oil Co., Damon Specialty Co., Denby Truck Co., Troy Motor Co., Ensign Carbureter Co., L. M. Davenport Co., Savage Rubber Co., Johnson & Howe, Pacific Rubber Co.

Graham Unit Makes a Complete Truck

FOR the truck attachment buyer who prefers to purchase a truck complete with cab and body, a solution is offered in the presentation of a complete attachment unit made by Graham Brothers, Evansville, Ind. The trade name of the new outfit is Graham Brothers All-3 Unit-Cab-Body. It fits the Ford chassis and comes all ready to attach at $385. This includes a choice of either express or stake body with the cab. The unit itself is practically assembled before shipment. The frames, axles and springs are completely assembled, the wheels and sprockets only being removed. By use of the attachment the wheelbase becomes 125 in., with a dead weight carrying capacity of 2000 lb. The weight of the Ford chassis with the truck unit, but without body, is 2150 lb. The recommended road speed is from 12 to 20 m.p.h.

The frame of the unit is channel steel and surrounds the Ford frame, to which it is bolted at front, sides and rear. The rear axle assembly of the Ford becomes a jackshaft rigidly held in place by bearings. The Ford rear wheels are removed and in their place sprockets are attached. Heavy artillery type wheels are placed on the unit with tires 32 x 3½. The latter are pressed on. The brakes, conventionally placed on the rear wheels, are 14 x 2½. They are of the internal-expanding type, Raybestos lined. The service brake remains the same as that on the standard Ford car.

Semi-elliptic Hess springs are fitted, being 2 in. wide and 42 in. long. There is also a semi-elliptic relief bumper cross spring. All sprockets are steel, mill cut and interchangeable. Correct alignment of the jackshaft and rear wheel centers is assured by the use of radius rods fitted with an adjusting bolt. The drive is by double roller chain. The rear axle is of drop-forged steel 1¾ x 2¼, tested to 4000 lb. The axle collars and hub bases are forged integral with the axle. Over-size Bock roller bearings are used.



The Graham unit is shown above attached to a Ford chassis and includes the driver's cab and also the body. Below the rear unit is shown unattached

Cab sills or base are heavy ash, and the side and top rails are cotton-wood. The latter is also used in the cab panels. The roof is covered with water-proofed oiled duck. Heavy gage metal is used in the sides of the cab. The back curtain, also of oiled duck, is fitted with a large light panel, and the driver's seat, together with the back, is covered with imitation leather.

The express body is braced with iron, the sills being ash. The floor of this body is oak laid on heavy ash cross beams. The side flare boards and panels are cottonwood, the latter being 12 in. high on the inside. An extra heavy end gate is fitted provided with the usual chain. This type of body provides a loading space of 106 x 45½ in. The stake body is also heavily braced and ironed, with ash sills, bars, oak floor, heavy bolted pockets for the stakes, which are of hickory, 36 in. high. The loading space of this body is 55 x 112 in. The finish of the unit is carried out in gray or royal blue, appropriately striped. The company is prepared to furnish bodies of special design to fit the truck attachment.

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Editorial Observation

The Silver Lining

THIS is to be the greatest age of labor conservation and increased efficiency the world has ever seen. And these virtues will be brought about by the war.

Lord Northcliffe, speaking before the convention of the Chamber of Commerce of the United States in Atlantic City recently, said: "This war is not altogether a bad thing; it has done wonderful things for science."

This is, perhaps, one thing that the average citizen has not yet realized. He has looked upon the war as something terrible, and assuredly it is terrible. But it has a brighter side—a side which will reveal the greatest progress that has ever been made in a similar period of time.

For the time being, politics has been knocked into a cocked hat. To-day England and France are ruled by business men—the greatest business men in these countries. America is ruled by business men. A few years ago it would have been impossible to imagine the gathering together of the greatest business minds in the country at Washington for the purpose of running the United States in the way it ought to be run.

Yet to-day we have our best railroad men in Washington, our best steel men, our best engineers, our best economists. These men are making history; they are putting their heads together and evolving methods of increasing efficiency and getting things done which are nothing short of astonishing.

Take the case of the Liberty airplane engine as an example. A year ago could anyone imagine the brains of a dozen rival airplane and automobile factories getting together and telling one another their most closely guarded secrets and in a few weeks creating a new type of engine far better than anything else yet designed and embodying the best ideas of all the leaders in these fields? This has been done.

All over the country business men have turned their thoughts in a common direction—the saving of time, the increasing of efficiency. Drygoods stores which have been giving five deliveries a day have by common consent cut these down to two, and made an enormous saving. Throughout New York State electrical experts have linked up the big town and the little one so that electric current may be conserved. Before this was brought about some cities made more current than they could use and others never had enough. Now this surplus and shortage is to be equalized so that all may have what they need.

These are just a few of the good things that have come out of this world war. This is part of the silver lining to the war cloud. More good will come; the benefits of the war will be lasting.

We must all bear these thoughts in mind: We must eliminate useless work; we must conserve our energy and our resources; we must increase efficiency. For we have got to get along with a lot less men and a lot less money than we have had in the year gone by.

This is the real job of those who stay at home.

A Good Way to Save

ONCE more the United States Government has asked us—all of us—for our help in winning the war. Secretary of the Treasury McAdoo has made public the terms under which the second Liberty Loan is to be made, and as was the case with the first loan, the terms are extremely easy.

This time the loan is to be for three billion dollars, and, like the other, the security is the United States Government itself—without doubt the most perfect security that could be given by anyone in these troublous times.

The loan differs from the first one in only one respect. It pays a higher rate of interest. This has been set at 4 per cent. Those who purchased the first issue of Liberty Bonds have the privilege of converting them into bonds of the second issue, paying the higher interest rate, if they choose.

This new bond issue can be paid for on the installment plan, just like the other. In other words, you pay 2 per cent when you apply, then 18 per cent on Nov. 15, 40 per cent Dec. 15 and 40 per cent Jan. 15.

"Why should we subscribe for these bonds?" someone asks. Because it will cost the government ten billion dollars a year to carry on the war. Because the total income of the people in the United States is only about forty billions. Because we must save one-fourth of our incomes to win the war.

There is no better way to save than to buy Liberty Bonds.

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What Others Think

THIS page is for the use of MOTOR WORLD readers with something to say. Letters on subjects of interest to dealers, garagemen, repairmen and jobbers are always welcome—especially if they are timely and brief.—THE EDITOR.

Fake Parts Causing Trouble

Editor Motor World: The sale of "fake" parts for automobile accessories has assumed disturbing proportions. Not only does the sale of such parts affect the sale of legitimate parts, but the class of material sold is of such an inferior and inaccurate nature as to seriously affect the function and reputation of the most reliable goods. This is particularly true of such material as carbureters, gears, springs, battery parts, magneto parts and the parts of practically all ignition systems.

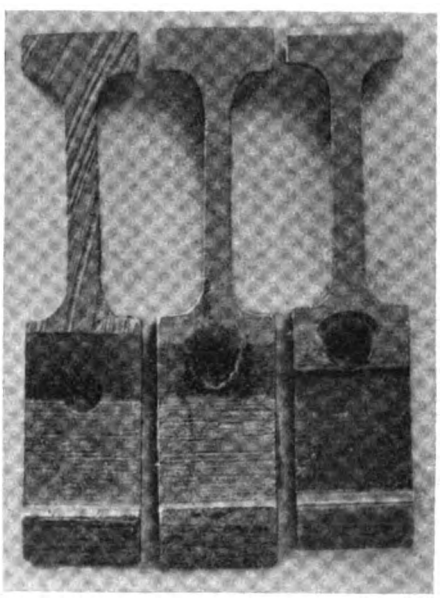
From a careful investigation as to inaccuracy of manufacture, inferiority of material used and dissatisfaction with the functioning ability of these parts we are in a position to say that this condition has become a trade menace. The principal reason why these parts are sold is that in practically all cases they are sold for very much less than the genuine article—sold cheap because made cheap.

We are enclosing you letters that we have sent to the manufacturers and also to Atwater Kent jobbers and official repair stations. In view of the fact that the ignition people are suffering from the substitution of inferior parts probably to a greater extent than other accessory manufacturers, we would suggest that you take this matter up with Delco, Remy, Bosch, Splitdorf, Connecticut, Eisemann, Westinghouse, Simms and Briggs and any other manufacturer that you may feel free to approach and get some first hand information in regard to this situation.—Atwater Kent Mfg. Works, H. E. Rice, Philadelphia.

What a Manufacturer Thinks

Atwater Kent Mfg. Co.,
Philadelphia, Pa.
Gentlemen:

We are having a great deal of trouble from parts dealers who are offering for sale so-called Hupmobile parts. We are trying to evolve some method of counteracting their work, which not only interferes with us by reason of cutting down our parts sales, but more serious yet, reflects on the quality of the Hupmobile because of the inferior goods which they furnish. There are two or three firms offering Atwater Kent repairs. In several instances we have had parts come in here which we knew were not from your factory and which were of decidedly inferior quality.



The Atwater Kent Manufacturing Co. sent us this photo. See if you can discover which two of the three are "fake" parts

I enclose you herewith a letter from Daniel S. Schwartz, who is one of the parties. I presume you have run into this before and will be very glad to do anything you can to check it up.—Charles D. Hastings, vice-president and gener l manager, Hupp Motor Corp., Detroit.

COPY OF LETTER SENT TO CAR MANUFACTURERS USING ATWATER KENT IGNITION

Gentlemen:

The sale of "fake" parts for automobile accessories has assumed disturbing proportions. Not only does the sale of such parts affect the sale of legitimate parts, but the class of material sold is of such an inferior and inaccurate nature as to seriously affect the function and reputation of the most reliable goods. This is particularly true of such material as carbureters, gears, springs, battery parts, magneto parts and the parts of practically all ignition systems.

From a careful investigation as to inaccuracy of manufacture, inferiority of material used and dissatisfaction with the functioning ability of these parts we are in a position to say that this condition has become a trade menace. In most cases the prices of "fake" parts is considerably less than the genuine, which seems to be the principal reason why they enjoy any sale whatever.

Your company may or may not have been a sufferer from this condition. However, to get any real action we feel that a concerted movement through all manufacturers and their dealers will be necessary.

Certain manufacturers consider the situation of such importance that they have advised their dealers that the substitution of "fake" parts for any of the standard accessories carried on their cars will be deemed sufficient reason for discontinuing dealer relationship.

We would suggest that if you are in sympathy with us in an effort to clean up this situation that you write to the Automobile Chamber of Commerce, to Motor Accessory Manufacturers and The National Association of Automobile Accessory Jobbers, and also circularize your own dealers on this subject. We enclose you copies of letters that we have sent to automobile trade publications and also to Atwater Kent jobbers and official repair stations. We trust that you will lend us your vigorous assistance.

We propose canvassing the entire automobile and accessory trade and invoking the aid of the editorial departments of the trade papers in an effort to get the movement immediate consideration.—Atwater Kent Mfg. Works, Philadelphia.

COPY OF LETTER SENT TO IGNITION MANUFACTURERS

The enclosed letters will give you an idea of a move that we have started in an effort to reduce the "Fake" Part Evil.

The sale of "fake" parts for automobile accessories has assumed disturbing proportions. The principal reason why these parts are sold is that in practically all cases they are sold for very much less than the genuine article—sold cheap because made cheap.

We do not feel that it is necessary to go into an elaborate presentation of this situation with you. Your experience has probably been as distressing as our own. A perusal of the enclosed letters will tell the story.

If you will lend your help to what we believe to be a most worthy attempt to rid the trade of this menace, we would suggest that you take up this matter with the car manufacturers using your product as standard equipment requesting them to communicate with the different automobile and accessory associations and trade papers carrying your advertising and get the full force of their help.—Atwater Kent Mfg. Works, Philadelphia.

More Room for Johnson

RACINE, Sept. 29—S. C. Johnson & Son, Racine, Wis., manufacturers of a variety of polishes, pastes, carbon removers and chemical compounds for the motor car trade, will erect a $25,000 addition to its plant.

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The RETAIL NEWS

SOUTH

Chevrolet Service Station, Vidalia, Ga., William Stevens, manager, has just opened for business.

Dr. William L. Gates, of Clarksdale, Miss., will remodel his stables into a garage and automobile sales and display building. The building has been leased by Phil Sessions, of Friars Point, who will operate a garage there.

Alabama Motor Car Co., Mobile, has been formed by Leo A. Flynn and F. A. Flynn, the latter as manager, to operate a public garage and automobile repair shop.

Kolman Tire Co., Greenville, S. C., J. Kolman, manager, will open a garage in the building formerly occupied by the Dixie Grocery Co.

Isaiah Hancock has purchased the interest of his partner, J. R. Dunbar, in the garage of Dunbar & Hancock, at Thomasville, Ga.

E. L. Sisson has rented from Mrs. J. W. Bailey of Gainesville, Ga., a part of the building occupied by C. N. H. Martin, where he will conduct a garage.

Maysville Garage, Maysville, Ga., H. T. Parks, proprietor, has sold his business to Morgan White and Tom D. Miller, who have taken charge.

C. L. Deal and E. L. Deal, his son, have purchased the building housing the Deal & Sisson Garage in Gainesville, Ga. They have also bought E. L. Sisson's interest in the business and have changed the name to Deal Garage Co.

SOUTHWEST

S. G. Hoffman Magneto Co., St. Louis, has opened a repair branch at 2600 Locust Street.

F. R. Rhode, 4133 Olive Street, St. Louis, is agent for the Corcoran radiator for Ford cars.

Bittel-Leftwich Co., St. Louis, is distributor for Westinghouse starting and lighting systems for Ford cars.

Anderson & Payne Garage, Mountain Grove, Mo., has been sold to Walker & Shaft. Improvements are being made, including an up-to-date office and rest room for tourists.

W. T. Houser, Natoma, Kan., is now the proprietor of the Streeker Bros. Garage.

Sylvester & North, Junction City, Kan., have moved their repairshop and garage to 216 West Seventh Street.

Gaddis & Mangus, Alton, Kan., have moved their garage into larger quarters, and will give both night and day service.

Simon & Davis, Jefferson City, Mo., who have been engaged in the garage business, have dissolved partnership and divided the business. Mr. Davis takes the machine shop and Mr. Simon will conduct the automobile agency.

M. J. Belter, Clinton, Okla., has purchased a garage and will conduct it under the name of the Apache Chief Garage.

Phares Root, Independence, Kan., has purchased the Vincell Co. Garage, and is remodeling the interior.

J. H. Stevens, Kaw, Okla., harness dealer, has purchased the Walter Lessert Garage.

Earl Workman, Woodward, Okla., is building a large addition to his garage, almost doubling its capacity. The Morey Motor Co. occupies the front part of the building.

Art Tucker, Smith Center, Kan., has purchased the Miller Garage. Lew Garman will be his assistant.

A. A. Wilds, Larned, Kan., has accepted a position with the A. A. Doerr Merc. Co. in its garage, and will have charge of the extra parts department.

J. R. Garret, Hutchison, Kan., has bought the Field Electric Co. business, which will be conducted under the name of the Peerless Electric Co.

Eddie McGowan, recently of Colorado, has taken charge of the accessories and service department of the Independence, Kan., Motor Co., and Guy Watt will devote his entire attention to the sales department.

Harve Shaw, Plainville, Kan., has purchased the Isaac Starbuck motor-oil truck business, and has also taken the Plainville agency for the Standard Oil Co.

Hudson-Oakland Sales Co., 803 Commercial Street, and the Dale Motor Co., 14 East Sixth Street, Allen, Kan., have consolidated.

Will Locke, Galesburg, Kan., has purchased the garage at that place.

Walter Penrose, Arkansas City, Kan., has purchased the A. J. Penrose interest in the Penrose Boys Auto Machine Shop.

L. H. Ames, Americus, Kan., harness dealer, is adding automobile accessories, tires and a filling station to his business.

Kelley-Springfield Tire Co., Dallas, Tex., has moved to its new home at 1506-18 Young Street. H. O. Thompson is manager.

W. H. Starr, Haskell, Tex., has bought the interest of N. H. Hester in the Haskell Tire & Battery Works and will continue the business under the name of W. H. Starr Battery & Tire Works.

W. M. and O. J. Harmon, of the Palace Garage, at Chanute, Kan., have purchased the Oriental Garage Building from E. M. Cooper.

R. C. Lawler, Girard, Kan., has purchased the Tannehill Garage, and will conduct it in addition to his automobile business. Mr. Lawler represents the Chevrolet car and Dart motor truck.

Charles Lett, Buffalo, Kan., is now manager of the Ford service station at that place, Ralph Malin, former manager, having retired.

G. M. Davenport will handle accessories in connection with his automobile agency at Coffeyville, Kan.

R. L. Protheroe, formerly of Kansas City, has taken a long term lease on the new Reid Garage on National Avenue at Fort Scott, Kan. He will conduct a repairshop and general service station.

J. N. Thouvenell, Winona, Kan., has leased his garage to Weien & Kentch.

M. V. Andre, Arkansas City, Kan., has engaged in the automobile supply business.

L. L. Parrish, Larned, Kan., formerly in charge of the Studebaker automobile department at Doerr's has formed the Parrish Motor Co., and will handle the Studebaker exclusively and will also maintain a service station.

King Auto Co., Atchison, has opened a branch in Hiawatha, Kan., with Frank Frazey of Atchison in charge.

F. J. Morrell, Pratt, Kan., is opening a vulcanizing shop, with H. B. Tadlock of Wichita in charge. Mr. Tadlock is an experienced mechanic.

Wynne McDougal, Princeton, Mo., sold his garage equipment and stock to John Morrison & Son, of Lexington, Mo., and will enter the employ of that firm.

John Cornish & Sons, Louisiana, Mo., now have charge of the Ford agency, succeeding Frank Chappel.

Erle Knight, Monticello, Mo., who has been proprietor of the Knight Garage, has sold his interest to his former partner, G. B. Wooldridge.

Universal Service Co., Kansas City, Mo., has leased the building at 112-14 Southwest Boulevard for three years. The company will specialize in motor car repairs.

J. A. Berkebile, Adrian, Mo., recently sold his garage to Norfleet & Ream, of the Public Garage in that city, and the same will be conducted as a branch Ford agency, with Mr. Roi Norfleet in charge.

Farmer's Lumber Co., Altamont, Mo., has entered the automobile business. The company is agent for the Oakland Six. Mr. Wallace is the manager.

H. G. Warnshodit, Wichita, Kan., manager of the Wichita branch of the Ford Motor Co., and J. W. Handy, his assistant, have resigned to enter the Ford retail business for themselves.

Mendenhall & Cross, Stockton, Kan., have opened a Willard service station in the J. Q. Adams Building.

Harry Gabbert, Troy, Kan., who recently sold his garage to G. L. Rugg, has repurchased it.

Lyman McCormick and Calvin Davidson, Yates Center, Kan., have purchased the Beine & Weide Garage in the Patterson Building.

J. T. Newby, Liberal, Kan., has purchased a half interest in the Edison Automobile Garage.

W. P. Elliott, Hardtner, Kan., has taken charge of the West Garage.

W. T. Porter & Son, McPherson, Kan., have purchased the Talbott Motor Co. business.

M. R. Benton and E. J. Martin, Harper, Kan., have rented the Roger Building next to the *Advocate* office and are fixing it up for storage and salesroom for automobiles. Mr. Benton handles the Buick and E. J. Martin the Oakland.

Art Tucker, Smith Center, Kan., has taken over the Maxwell Garage. He will handle this car in connection with a general garage business.

Harry McGregor, Courtland, Kan., has sold his garage to a Mr. Kauffman of Nebraska.

Pearl Courter, Paola, Kan., has became the owner of the Platt Garage on West Peoria Street.

Carl Fay and T. H. Trayner, Dodge City, Kan., are the proprietors of the City Garage & Machine Shops.

Standard Tire & Rubber Co. of Detroit, has located in Kansas City and will use a two-story and basement building at 1604 Grand Avenue as a distributing branch.

E. J. Tranin, Kansas City, has sold his interest in the Elgin Motor Sales Co., 1821-23 McGee Street, to C. J. Lowery, former field man for that company, and will enter another line of business. Dr. J. F. A. Casey, president and treasurer; Mr. Lowery, vice-president, and J. E. Crawford, secretary, are the new officers of the Elgin Motor Sales Co.

F. C. Brickey, Bunceton, Mo., the Ford agent for Cooper County, has leased the store building west of the City Garage in Bunceton and will use it for a storeroom for his Ford cars.

F. M. Paxton, El Reno, Okla., has purchased the business of the Martin Garage at 301 South Rock Island Avenue, from Frank Sheckler.

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Wilson Motor Car Co., Frederick, Okla., has moved its salesrooms to the Hargrove Building.

New Garages

Joseph Osgood.....Jefferson City, Mo.
T. L. B. Garage.....Winona, Kan.
The Ross Motor Co.....Stafford, Kan.
J. E. Rodkey.....Blue Rapids, Kan.
Goodin Motor & Truck Co....Wichita, Kan.
Brewster Brothers.....Independence, Kan.
J. Bronson .....St. Marys, Kan.
Clifton Garage .....Clifton, Kan.
The Ross Motor Co.....Stockton, Kan.
R. C. Shipler.....Alden, Kan.
W. P. Elliott .....Hardtner, Kan.
The Ruttan-Winslow Garage.Grainfield, Kan.
C. E. Bailey.....Douglas, Kan.
J. P. Klaum.....Ottawa, Kan.
H. Kugler .....Abilene, Kan.
Neal & Holman.....Fulton, Mo.
Grover Delap .....Urich, Mo.
Pemiscot Motor Car Co..Caruthersville, Mo.
A. V. Pearman.....Webb City, Mo.
Frank Carter.....Glasgow. Mo.
Seger & Brink.....Colony, Okla.
Will McCarty.....Haskell, Tex.
H. Chenault .....Wichita Falls, Tex.
Hoyt Byrum.....Naponee, Neb
D. Ward Dunlap .....Clarksville, Ark.
Arlington & Love.....Clarksville, Ark.
Noan Mills Co.....Leesville, La.
W. J. Newman.....Nogales, Ariz.
Jim White .....Alex, Okla.
Oberlander & Davis.....Frederick, Okla.
H. H. Wilkenbunk.....Washington, Mo.
Miller & Schrader.....Osage City, Kan.
Herman Wetzig (50 x 150).....Junction City
Earl Workman (addition)..Woodward, Okla.
Norman Dixon (50 x 100).....Tryon, Okla.

MIDDLE WEST

Portage Motor Car Co., Portage, Wis., owned and operated by Fenner & Port, has been sold to S. W. Palmer and E. R. York, who have been doing business as the Portage Jeffery Car Co., West Cook Street. The garages are being consolidated at the Fenner & Port headquarters and Frank Fenner will be associated with the new owners.

Wallace Poe, Beloit, Wis., is building a garage and warehouse at Park and Copeland Avenues, to be devoted exclusively to used car business and for wrecking old cars for parts. The business will be conducted under the style of Beloit Wrecking Works.

Florence Garage Co., Florence, Wis., sustained a loss of about $2,000 by fire, which destroyed its building at Central Avenue and Quinnesec Street. A new fireproof garage and repairshop will be erected immediately.

James Jensen, Grand Rapids, Wis., Ford dealer, has taken as partner John Anderson, until now with the G. A. Gullikson Co., Stevens Point, Wis., Ford dealer. Jensen & Anderson contemplate the erection of a garage and service building costing about $10,000.

Appleton Auto Co., Appleton, Wis., which has been confining its attention to the taxicab and livery business, has been appointed Overland dealer and hereafter will be known as the Appleton Overland Co. A garage and service station has been opened in the former Tierney livery and transfer building. E. F. Schneider, E. A. Kubitz and L. O. Schweitzer are proprietors.

Butler Garage, 423 Water Street, Milwaukee, owned and operated by Jack Butler, was damaged by a fire on Sept. 19.

Madison Motor Car Co., Madison, Wis., has rented the repairshop of its main garage to Torgeson Bros. of that city, who will conduct it as a separate business.

Grand Motor Sales Co., 1384 Grand River, Detroit, has opened for business.

Hancock Auto Wrecking Co. has opened offices at 434 Hancock, E., Detroit.

Hub Electric Co., 41 Jefferson, E. Detroit, has opened for business.

Michigan Motor Specialties Co., 26 Dubois Avenue, Detroit, has opened for business.

Post Tavern Garage, Battle Creek, Mich., has begun the housing of cars. The agency for Cadillac has been secured for Battle Creek territory. The company will operate the sales department of the garage business, and in addition to the Cadillac it will have the Overland and the Detroit electric. J. S. Woodward will be manager of the garage; M. Dempsey will have charge of Cadillac sales; Elmer Prentice will have the Overland sales, and Frank Walters will be in charge of the service station.

I. A. Davis, Gladstone, Mich., has disposed of his interest in the Gladstone Auto Co. to his partners, Peter Holmgren and N. Westling.

Manistee Sales Co., Manistee, Mich., is the new name of the Manistee Buick Co. Russell K. Currie will remain at the head of the concern, which, in addition to a general garage and accessories business, will specialize in the Chevrolet and Cadillac. The company has just received the agency for the Cadillac.

New Garages

Schmitt Bros. (60 x 100),
Port Washington, Wis.
Schneidewind & Zehms (44 x 96),
Sheboygan, Wis.
Wollner & Wiskirchen (50 x 100),
West Bend, Wis
W. L. Gilligan (60 x 103),
Rhinelander, Wis.
Sheboygan Auto & Supply Co. (50 x 30),
Sheboygan, Wis.
Bluem & Hartung (57 x 100).Milwaukee, Wis.
L. K. Edwards (50 x 90)....Escanaba, Mich.
C. H. Williams, Architect (125 x 150),
Green Bay, Wis.
Public Garage (125 x 150)..Green Bay, Wis.
Curry & Roberts (150 x 150)..Ashland, Ohio

NORTHWEST

S. S. Murrison, Brooklyn, Iowa, has bought a partnership with his brother, G. W. Murrison, in the Ford agency.

Cole Automobile Co. is opening a salesroom at Burlington, Iowa.

George Grapes, Hamburg, Iowa, has sold his interest in the G & G Garage to his partner.

Donaldson Bros., Milford, Iowa, have sold their supplies and accessory business to Meyderdink Bros.

Kilburg-Rickabaugh Co., Lemars, Iowa, has moved into a new garage on Main Street.

Richardson Brothers and the **Bright & Highley Accessory Co.**, Estherville, Iowa, have moved into new quarters in the Gardston Hotel Building.

Wiener & Fisher's Garage, Bonaparte, Iowa, was damaged by fire recently.

George Newcom, Boyer, Iowa, has bought the Lincoln Highway Garage at Denison, Iowa.

R. H. Samisch, Ames, Iowa, has opened a new salesroom in the Masonic temple.

Sexton Miller Oil Co., Des Moines, has moved into new quarters at 1401 Grand Avenue.

J. C. Brader, Madison, Wis., has bought out the interest of his father in the Brader Garage, Storm Lake, Iowa.

Kula Brothers, Prairieburg, Iowa, have opened a garage and taken the agency for the Studebaker.

F. H. Walker, La Porte City, Iowa, has taken over the garage and repair business of N. P. Bedar & Sons.

New Garages

Lexington Motor Co. (100 x 150),
Great Falls, Mont.
Parks Motor Co.....Afton, Iowa
Estes & Co.....Leon, Iowa
Low-Kurtz Auto Co.....Sac City, Iowa
S. S. Hanson.....Nevada, Iowa
Fred Selzer .....Mediapolis. Iowa
William Werheim (50x120) Eagle Grove, Iowa
Sam Hanson (180x100) .....Nevada, Iowa
Sam Gillespie .....New Market, Iowa
Day & Night Garage (addition 58x66)
Dyersville, Iowa
H. Skiries and W. Zobel .....Bremer, Iowa
Hoffman & Nash ($30,000, 100x110)
Helena, Mont.
Swendeman Auto Co. (101x176)
Helena, Mont.
Frasers-Pence Co. (40x80) ...Jerome, Idaho
J. C. Ford (20x60) .....Kimberly, Idaho
Browning Bros. (100x300) Idaho Falls. Idaho
Whitby Garage Co. (100x175) ..Buhl, Idaho
Lind Auto Co. (180x250)....Twin Falls, Idaho
A. F. Burger .....Dewitt, Neb.
F. C. & G. C. Hubbell.....Des Moines, Iowa
Rosenberg Hardware Co., Lexington, Neb.
A. B. Huff .....Ord, Neb.
Charles Wright .....Aberdeen, S. D.
King-Bruns Auto Co. .....Binford, S. D.
McKinney & Murn (60x100).....Foley, Minn.
Schulz Lumber Co. (50x110).. Beach, N. D.
Clives Motor Co.....Hazelton, N. D.

PACIFIC COAST

Eureka Oil Co., Portland, Ore., has purchased the wholesale oil and grease business of the Motor Car Supply Co.

Western Motor Sales Co., Seattle, has opened a new service station at East Union Street and Tenth Avenue.

J. W. Capek & Co., Ford dealers, Tacoma, have been appointed distributers for Goodyear solid truck tires in Tacoma and Pierce County. A 350-ton press is being installed by the company.

Sam J. Kenyon Garage, Tacoma, is in new quarters at 218-20 St. Helens Avenue.

H. E. McEldowney, owner of a garage in Tacoma, has added two floors to his present quarters, with floor space of 24,000 sq. ft.

W. F. Greene, formerly manager of the battery department in the Mission Garage, Santa Barbara, Cal., has opened the Auto Electric and Battery Shop at 1219 State Street.

Charlesworth Bros., 1002 State Street, Santa Barbara, Cal., have added a fourth station on the highway to handle gas, oils and greases and factory seconds in tires.

E. W. Hood has purchased the Valencia Street Garage, 913 Valencia Street, Los Angeles, from Lewis Green.

W. H. Stuart & Sons have purchased the California Garage, Ventura, Cal.

Modern Vulcanizing Co. has opened a general tire store at 981 Osas Street, San Luis Obispo, Cal.

Sunset Motor Co., recently organized in Seattle by G. E. M. Pratt and Gifford Jones, has opened a branch in Tacoma for the distribution of the Cadillac and Hupmobile. The company is contemplating the erection of a three-story structure, to be finished by Dec. 1. K. K. Burkhart, for several years connected with the Overland organization, has been selected resident manager.

New Garages

Dodge Automobile Co. (57 x 90),..Salem, Ore.
Friedman Bros. ($25,000, 100 x 100),
Portland, Ore.
Emerson, Remington & Coleman ($40,000).
The Dalles, Ore.
Sunset Motor Co. ($69,000, 81 x 112)..Seattle
F. H. Bradshaw ($20,000, 80 x 120)..Seattle
G. D. McGilliard (50 x 125).....Los Angeles
R. P. Huff (100 x 160)....Santa Barbara, Cal

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THE LAW

As It Applies to Dealers, Garagemen, Repairmen

The editor of this department is glad to answer questions. In sending queries, always include copies of contracts, notes, etc., to which you refer

By George F. Kaiser

Leasing a Shop

Editor Motor World: There is a large one-story garage nearing completion in the Roxbury section of Boston. I am a machinist and automobile repairman of 12 years' experience. Now the owner of this garage wants me to take over the repairshop end of this business and run it with the understanding that he is to get one-third of the profits. He says that if necessary he will build a repairshop large enough to accommodate six cars and will also equip it with lathe, drill-press, arbor-press, grinder, etc.

He is also to furnish the capital for the purchase of parts and to carry the necessary stock, such as brake lining, cap-screws, lock washers, spark plugs, etc. That is to say—suppose that a job comes in to have a new set of rings fitted, I simply get the rings charged to his account and after the job is paid for (I am planning to have all work on a strictly cash basis) the cost of the rings would be deducted before giving him his one-third.

I am well known in this neighborhood and have quite a large following and therefore he wants me to run the repairshop as an entirely separate business from that of the garage.

Do you think this plan is workable and if so, would you send to me by return mail, if possible, a draft of the kind of agreement that would protect me that in the event of my working up a good business he should want to oust me?—F. G. C., Woburn, Mass.

Answer—This plan is often used particularly by the owners of non-service garages who wish to be able to offer repairing facilities to their customers. The best agreement to be drawn up would probably be a lease from the garage owner to yourself for one, two or three years, as you may desire. It could be stipulated that one-third of the profits should be paid as rent. Motor World cannot undertake to draw up this agreement for you, but you can have it done in your home town for a very reasonable charge.

This Sign Is Safe

Editor Motor World: Here below we are giving you a plan of a sign we wish to put on the front of our garage, and wish to know if it will interfere with Henry Ford's copyrighted sign or emblem. Or, will we be making ourselves liable to the law in any way by the use of the outlined sign below?—Clyde B. Westbrook, Westbrook Garage, Uvalde, Texas.

SEE US
FOR
OUR
REPAIR
DEPARTMENT

Answer—I see no reason why you should not use the illuminated sign set out in your letter if you desire. It does not appear to conflict with any copyrighted sign or trade mark and I do not think that there would be any objection to it.

Fire Responsibility

Editor Motor World: We would like to know if in storing cars over night we are responsible for loss in case of fire or theft. If so, how can we get around it?—Stella Auto Co., Stella, Mo.

Answer—A garageman is not an insurer of goods left in his care. That is to say he is not responsible every time a car stored with him burns up, as an insurance company is when cars covered by policies issued by it are damaged by fire.

It is only in cases where a garageman's own negligence was the cause of the loss that he has to pay damages.

The courts have held time and again that a garageman is only responsible for failure to use reasonable care in protecting from fire property left in his charge. It never does any harm to put up a sign reading—"Not responsible for loss in case of fire."

Each case where fire occurs in a garage must be decided on its own particular facts, so if you have a fire, before deciding whether or not you are liable, you will have to find out what caused the fire and whether you could have prevented it by the use of ordinary common sense.

Fulton Truck Prices $130 Higher

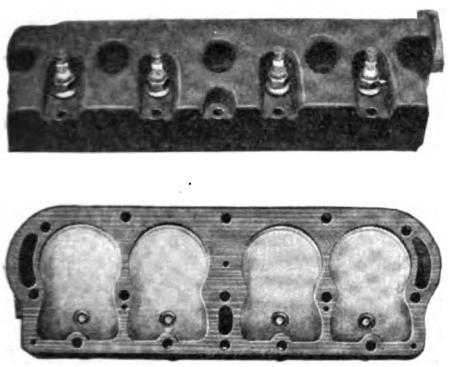
NEW YORK, Sept. 25—The Fulton Motor Truck Co. has increased the prices of its motor truck $130, effective Sept. 8. The rise will affect dealers Oct. 10. The price is now $1,420.

Dealers, Garages, Machine Shops and Supply Houses in Operation

State	Dealers	Garages	Repair Shops	Cos. Having Supply Depts.	Jobbers	Supplies Exclusively	Total
Alabama	171	110	89	41	2	26	291
Arizona	100	90	58	37	..	14	171
Arkansas	183	111	68	44	..	22	278
California	1191	1317	850	356	19	150	2198
Colorado	341	321	194	111	3	21	528
Connecticut	446	480	263	111	7	74	845
Delaware	70	64	27	11	..	5	97
District of Columbia	65	58	36	9	3	20	146
Florida	254	260	176	86	2	40	482
Georgia	357	258	131	74	1	44	97
Idaho	162	110	64	48	1	17	208
Illinois	1853	1677	964	446	19	126	2930
Indiana	975	822	436	288	10	60	1539
Iowa	1579	1345	711	486	7	61	2313
Kansas	853	786	425	344	8	29	1478
Kentucky	291	236	93	78	3	25	417
Louisiana	148	80	51	40	3	18	216
Maine	294	262	140	97	3	16	481
Maryland	239	249	128	78	2	32	420
Massachusetts	780	863	436	205	15	128	1495
Michigan	943	837	367	269	7	89	1511
Minnesota	1122	823	472	280	14	42	1528
Mississippi	137	88	47	39	..	13	194
Missouri	787	629	413	218	16	67	1315
Montana	250	202	135	91	2	11	348
Nebraska	807	648	283	222	8	23	1099
Nevada	56	52	29	16	..	5	88
New Hampshire	187	209	103	63	..	11	324
New Jersey	627	765	429	208	1	79	1290
New Mexico	99	80	43	38	..	8	152
New York	1929	2227	1220	476	15	314	3804
North Carolina	328	242	114	95	1	25	459
North Dakota	511	330	199	139	1	10	2682
Ohio	1746	1402	670	494	27	143	2648
Oklahoma	388	329	155	156	3	28	616
Oregon	209	242	137	74	4	26	381
Pennsylvania	1730	1761	856	566	14	207	3005
Rhode Island	90	142	92	16	5	12	264
South Carolina	181	117	63	54	2	18	279
South Dakota	435	315	176	111	2	7	594
Tennessee	220	152	92	67	3	26	326
Texas	719	558	297	200	10	85	1231
Utah	97	70	47	25	3	12	156
Vermont	176	162	95	55	..	11	281
Virginia	257	192	128	58	1	42	415
Washington	365	355	194	92	7	46	638
West Virginia	209	145	63	61	..	13	265
Wisconsin	1043	901	428	309	81	41	1460
Wyoming	82	62	40	26	..	9	120
Territory of Hawaii	11	8	9	3	..	6	19
West Indies	26	22	5	7	..	3	38
Canada	924	817	415	203	19	71	1354
Mexico	9	..	4	2	..	2	17
Total	27,052	24,483	13.161	7,723	282	2,433	45,531

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Accessories

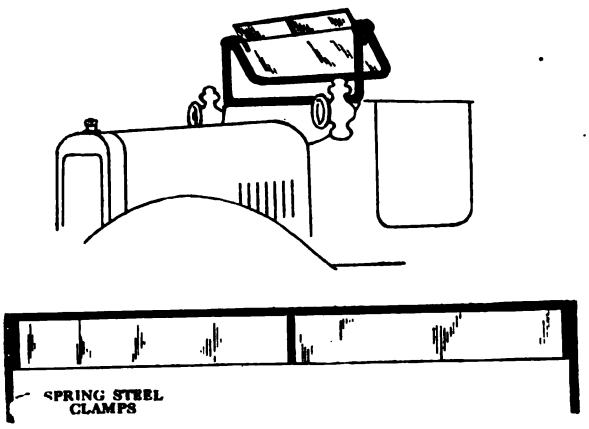


CYLINDER HEAD FOR FORDS

A head which provides a much larger waterjacketing space and is designed so that the spark plugs are completely surrounded by water. The plugs are mounted between the valves, this part of the combustion chamber being hollowed so that it permits a very free passage of the gas. Greater power and fuel economy are claimed. Price, $16.—Green Engineering Co., 45 South St. Clair Street, Dayton, Ohio.

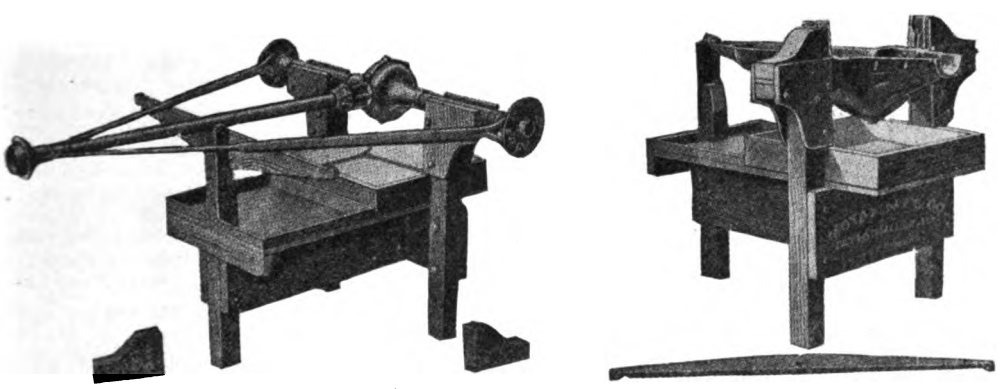
OAKITE CLEANER

Oakite is a chemical solution for removing grease and dirt from automobile parts and is said to be superior to gasoline or washing soda. It is a combination of mineral salts in the form of a dry white power. It is not an alkali, will not harm paint or varnish or any other materials, nor even the most delicate fabric or the skin. It may be used for cleaning waste and cloths in the shop, a special tank being provided for this purpose. It is said to have the advantage over all soap-forming cleaners in that it forms an emulsion. When soap is used it combines chemically with the grease and is thus weakened. Furthermore, a film of soap remains on the surface and must be rinsed off. These objections do not apply to this material. Oakite was fully described in the Sept. 26 issue of Motor World, page, 23, but the name of the manufacturer was omitted. It is made by the Oakley Chemical Co., New York.



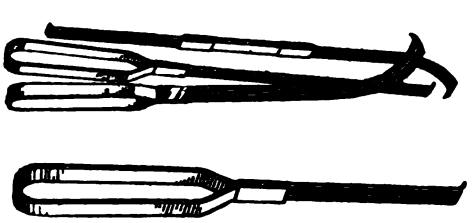
VENTILATING WINDSHIELD FOR FORDS

The Stinson windshield attachment is a device that may be clamped to the upper glass of the windshield of 1915, 1916 and 1917 Fords, converting it into a ventilating windshield. Price, $2.—E. B. Stinson, Jr., & Co., Louisville, Ky.



MOTAX COMBINATION STAND

As the name suggests, it may be used for motor or rear axle work and is designed particularly for the Ford. For rear axle work a cross-arm is mounted on the front leg. This is removed when a motor is put in place and two blocks are added at the rear to take the motor support arms. No bolts are used in making the change. Price, $20.—Motax Mfg. Co., Taylorville, Ill.

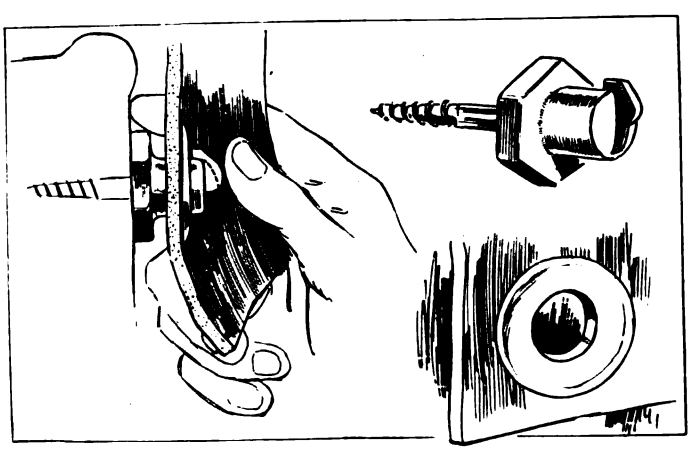


FLEXIBLE CARBON SCRAPERS

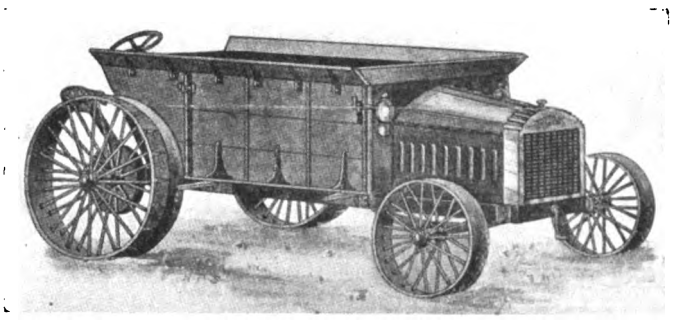
A set of three tools for scraping the carbon from motors. All parts of the combustion chamber may be reached through the valve plugs. Price, $1.50 per set.—Flexible Carbon Scraper Co., Los Angeles.

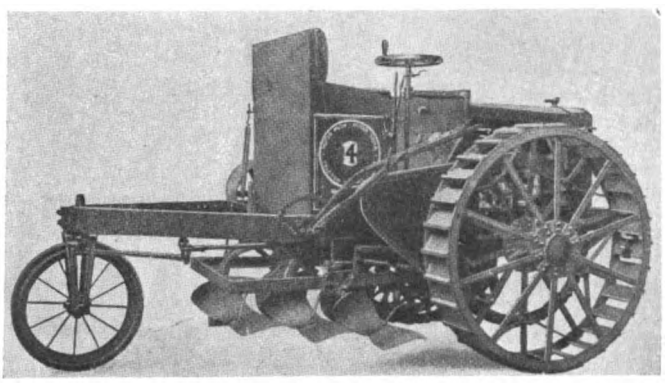
CINCH CURTAIN FASTENER

A curtain fastener which is unlocked by the slightest pressure of the thumb, yet holds the curtain firmly in place without any possibility of it coming loose. It is of simple construction, the lock consisting of a hooked member which overhangs one side of the head of the screw in which it is mounted. The hook is held in position by a small spring located inside the screw head. A slight pressure of the thumb slides the hook back far enough so that the curtain button may be pulled off. To put it back on, it is simply pressed over the head of the screw.—L. C. Chase & Co., Boston.



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WOODRUFF FARM-TRUCK TRACTOR

It is both a truck and a tractor and the wheels are adapted for work in soft ground as well as on the road. The driving wheels are divided into two sections, one with a smooth rim and the other with cleats. Standard units will be used, including Waukesha motor, Timken bearings, Dixie magneto, Cotta transmission, etc. It is planned to have the machine in production by the first of February.—Woodruff Farm Machine Co., Ridgewood, N. J.

KARDELL 4-IN-1 TRACTOR

It has four distinct uses, as a tractor, truck, motor plow or for stationary power. As a motor plow it has a triangular frame with two large wheels at the front and a small piloting wheel behind and the plows or cultivators are placed under the center of the chassis. It is said to have a capacity of from 12 to 15 acres per day with three 14-in. plows.

By removing the plowing attachment it may be used as a tractor. For road work broad metal strips are bolted to the surfaces of the wheels.

It is transformed into a truck by substituting a pair of rear wheels with springs, and mounting a truck body.

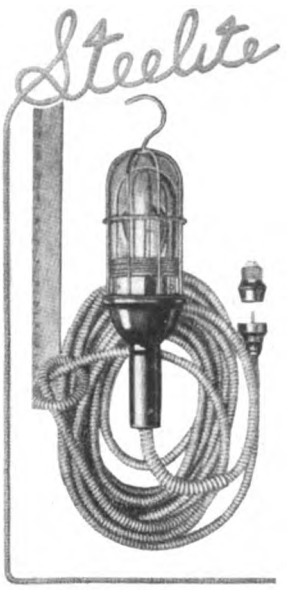
It is equipped with a 20-in. pulley so that it may be used as a stationary engine for work requiring stationary power.

A 4½ x ¾ in. Waukesha engine is used with a gearset giving two speeds forward and two reverse.—Kardell Tractor & Truck Co., St. Louis.



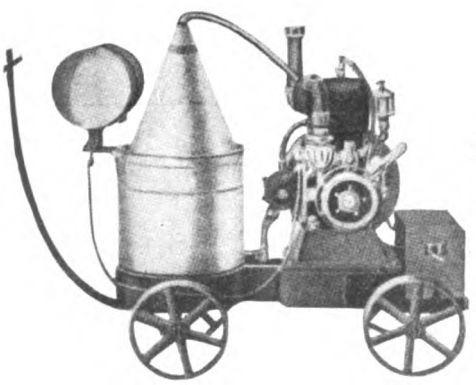
TENSION RINGS

It consists of two sections interlocking so that all leakage is prevented. The rings are made of individual castings of finest gray iron.—Edward A. Cassidy Co., Madison Ave., at 40th St., New York.



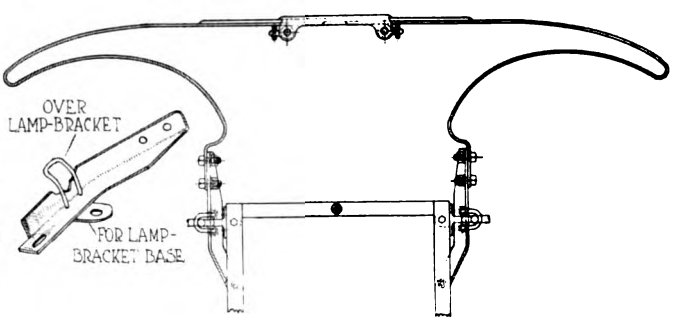
STEELITE PORTABLE LIGHT

The portable cord is practically indestructible, consisting of two conductors encased in a solid jacket of rubber with a saturated waterproof braid over which is an armor of steel ribbon with interlocking flanges. Price, $12.60 for light and 25 ft. of cord.—Inland Electric Co., Chicago.



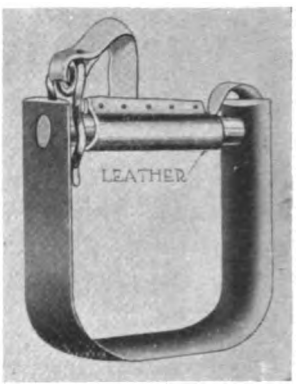
CUSHMAN PORTABLE ENGINE

Designed to be used about the shop or on the farm. It is a single cylinder, four-cycle water-cooled design, equipped with Schebler carbureter and throttle governor.—Cushman Engine Co., Lincoln, Neb.



HARTFORD BUMPER ATTACHMENT FOR FORDS

It permits the attachment of the bumper to the sides of the Ford frame, instead of to the front. Each member comprises an angle iron strip that is fastened to the frame by bolts that are already in position, and in addition fastens by a U-bolt over the lamp bracket. In this position the attachment is simply an extension of the Ford frame. The price for the Ford bumper, black finish, is $9.50; finished in nickel, $10.50.—Edward V. Hartford, Inc., Jersey City.



EASYON SOLID TIRE GRIP

A U-shaped member fits around the tire and is held in place by a leather covered bar which is locked by a spring pin. The member is rounded so as not to cut the tire. When running on pavements little or no bumping is caused, due to the flatness of the device. When the wheel begins to slip the grip slides back against a spoke and the lower edge digs into the ground. It is made for single or dual tires in practically all sizes. There are twelve grips to a set or six per wheel. Price, each, varies from 75 cents for 3½ in. tires to $2 for rims of 15 in. width.—Woolworth Mfg. Co., Niagara Falls, N. Y.

HARDING CATALYTIC SPARK PLUGS

Carbonization of the spark plug insulator is prevented by designing the plug so that it is sufficiently hot to burn some of the mixture on the compression stroke, by what is known as fireless combustion by the manufacturers. The combustion prevents carbonization.—Flameless Combustion Spark Plug, 6230 Stony Island Ave., Chicago.

HAYES BATTERY BOXES

The Hayes Mfg. Co., Detroit, is putting out a complete line of tool and battery boxes, distributed by the Onguard Auto Necessities Co. of the same city. They are constructed of sheet steel, finished in enamel and equipped with locks. The prices are included in the following tabulation:

Stock Sizes, Inside Measurements

Style	Length In.	Width In.	Height In.	Price
Y	12	8½	10	$2 50
A	13½	8	10¼	2 75
D	16⅝	9	10¾	3 00
(Special Ford Size)				
J	18	8	7	2 50
A T.	20	8½	10¼	3 50
F	22	9	10	4 00
(Special Ford Size)				
H	22	9	7	2 50
W	24	10	9	4 50

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Planning a New Building

4—Why Showroom and Accessory Store Are Necessary

Selling accessories without a store or cars without a showroom is inefficient—relatively small returns are obtained for the energy expended. They are the most essential part of the sales equipment. To do without them is like trying to make a success of the repair business with a monkey wrench and a screwdriver

By Harold F. Blanchard

THE question as to whether a showroom, accessory store or both will be included in the building plan should be decided at this point because it is impossible to construct either one of these rooms as an afterthought and obtain the best results. Accessory store and showroom must be a unit with the offices, garage and shop. The position and size must be carefully determined, and it is rarely that this can be done unless the plan is drawn at one time. It is difficult to make over a plan or a building in which no provision has been made for these two all-important departments.

EVERY man who sells cars should have a showroom; everyone who sells accessories should have an accessory store. It is doubtful where there is a single valid exception to this rule, although this statement will bring forth many objections from those who do business without showrooms or accessory stores or both and never expect nor want to have either.

Even in a very small town a showroom or accessory store, although it may be small, is a necessity, and if in a particular instance it is concluded that it is more than the trade could bear, then it is almost certain that it is a waste of time to do business at this point.

A man cannot gain results in comparison to the effort expended unless he uses proper equipment. No farmer would attempt to spade his ground instead of plowing it because his farm was too small to support a horse, nor would he attempt to reap his grain by hand instead of with a binder because the returns were not great enough to justify the purchase of this equipment. Either he would get these things one way or the other or he would move to a farm large enough to support the equipment required.

Necessary Equipment

A showroom must be considered as necessary equipment for the car salesman and the accessory store is essential equipment for the accessory salesman. They are just as necessary as a bench to a carpenter or an anvil to a blacksmith. It would be possible for either one of these skilled mechanics to do work without bench or anvil, but experience has proved that it is not economical to work this way.

The more progressive men throughout the country already realize that a showroom and accessory store are not simply nice things to have if you can afford them, but are absolutely necessary.

Merchandising Requires a Store

Hundreds of years of experience have proved that a store is required for the successful retailing of goods. All good merchants have stores; even in the smallest communities. Even the general store at the country crossroads is something more than a stockroom in that some attempt is made to display goods in windows, on shelves and in showcases.

Probably some of the backwardness in the adoption of showrooms and accessory stores is due to the fact that dealers do not fully realize that they are merchants and should be guided by proved experience of other merchants in all lines. Therefore, it is necessary to emphasize first of all that the man who sells cars or accessories is in the merchant class and should do things the way merchants do them. Even in a very small town, all the merchants with the possible exception of dealers or garagemen have stores. Usually the village druggist has a very fine store with a marble soda fountain and all modern improvements. As a rule, the drygoods store is an attractive place with goods tastefully arranged in show windows and on shelves. The grocery store is a model of neatness with long rows of cans on shelves and with window displays showing tempting articles of food. And so it goes all the way down the list.

One of the first principles of merchandising is that goods must be seen to be sold. The showroom or accessory store has an advertising value; it is like a billboard except much more valuable. No one questions the benefit that can be obtained by advertising on billboards. An attractive picture of the advertised article together with a few commendatory words will often sell the article to a

Coming Instalments

Location of Departments, Oct. 10

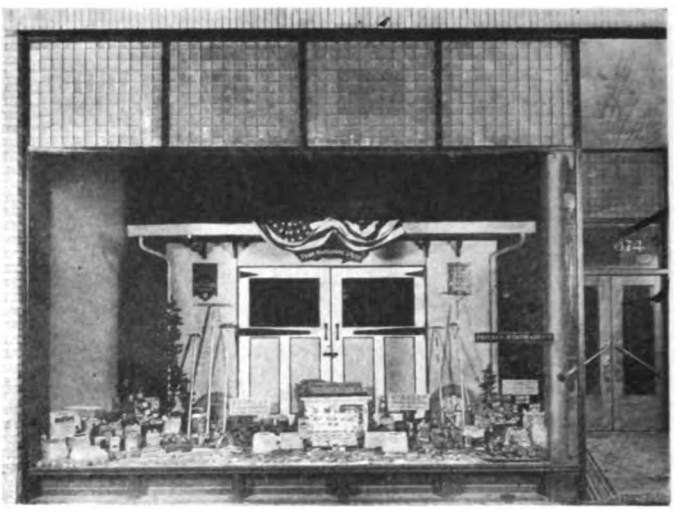
FOLLOWING articles will consider the question of scientific layout, after that plans for standard plots will be considered and then finishing, decoration and equipping of the interior will be described.

We shall be glad to draw a plan for you or give you any other aid in your building, free of charge. But be sure to send full details, including a sketch of the plot, showing position of streets.

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A splendid small town hardware store. Yet it is not unusual to find a store of this high character in small towns as well as large. Accessory stores, particularly those run in connection with garages and showrooms, which would measure up to this high standard of merchandising are very rare. The man who puts up a large, expensive building should take the hint and see to it that his accessory store compares with the best in the town

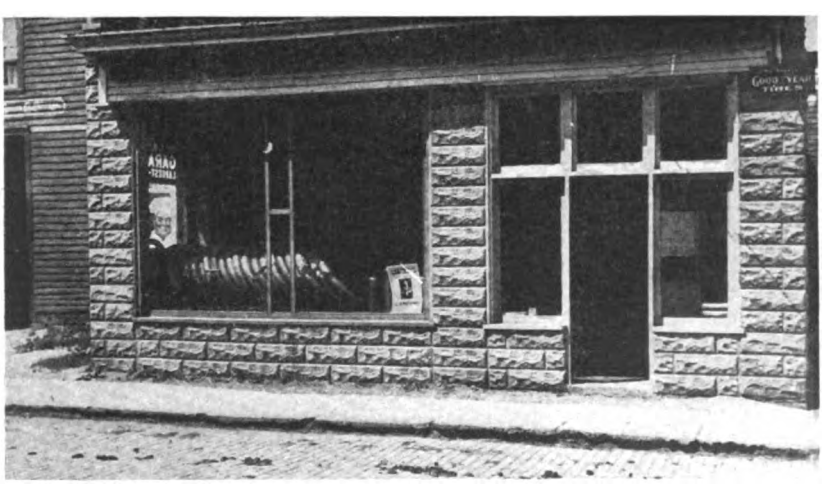


A fine, broad window, tastefully dressed, and framed in an attractive building is indispensable equipment, according to this hardware merchant's belief. This display would be physically impossible if the merchant did not possess an ample window to place it in, and the whole would look absurd if housed in an ugly building. Therefore it is plain that the building is the first step toward better business. Contrast this store with those at the bottom of these pages

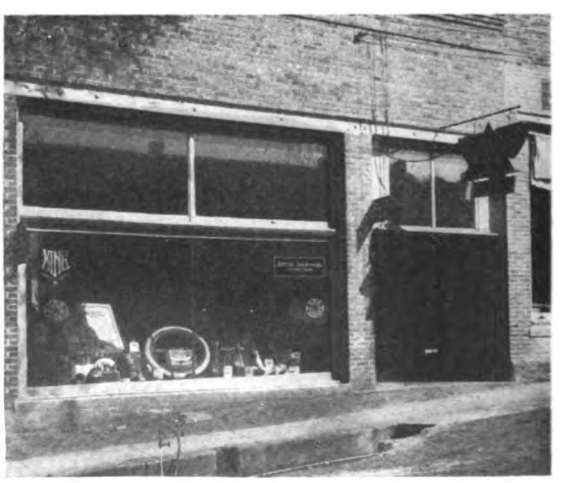


This garage possesses a good accessory store. There is an ample window for display, and, what is equally important, a door leading directly from the street into the store. It is not necessary to go through the main garage entrance in order to get into it

An Adequate Store Building Is Simply Initial Equipment for Successful Car or Accessory Merchandising

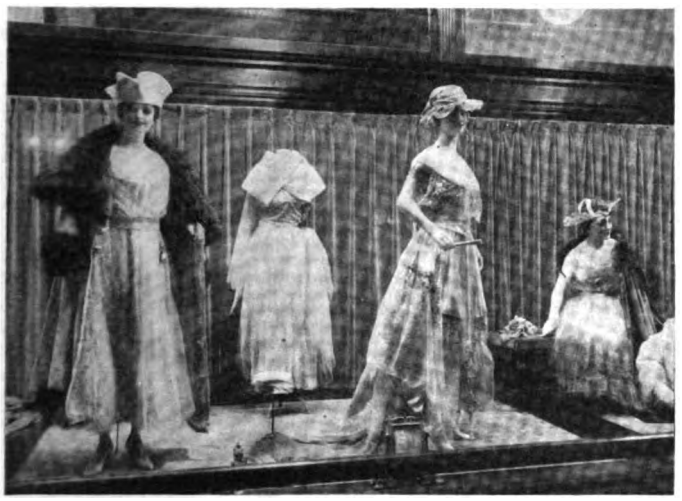


Not an accessory store nor a show room. Simply a bare room with a desk and a few tires thrown around. It might have been a fine showroom and store if a little more taste had been used in the construction of the building, and a little more common sense in the arrangement of the windows. Yet this business is located in a town of 30,000 and in it you will find many stores such as those shown across the tops of these pages

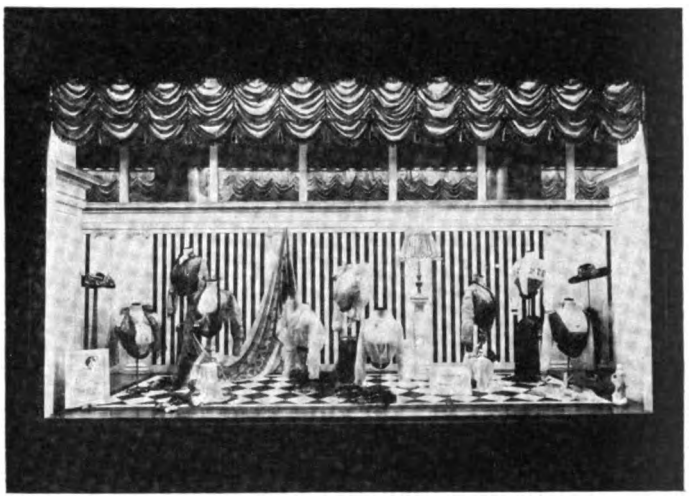


This store and showroom has one fine feature—a broad window The building itself is plain and ugly, although it might have been made to appeal to the eye without adding more than a fraction to the total cost of the structure. There are two fine display windows in a garage next door unused. A better plan would have been to employ the latter for accessories so that the showroom might afford an unobstructed view of the cars in it

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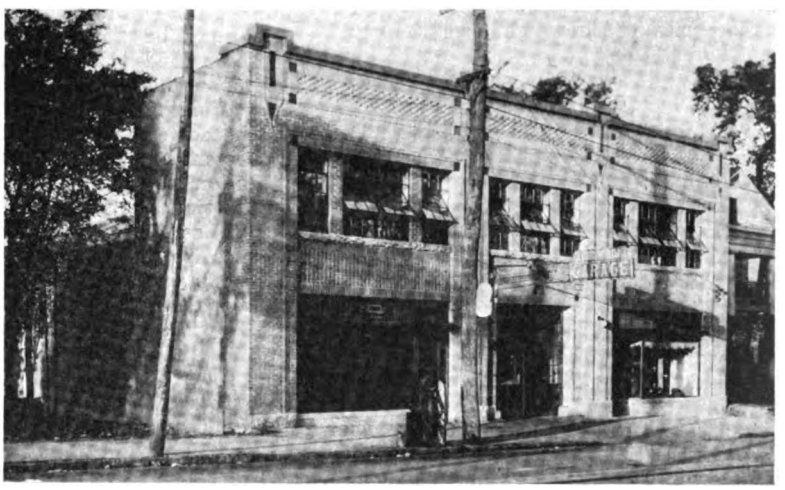


Closeup of a dry goods store in a small town. Unfortunately it was not possible to obtain a picture of the whole store building. But the lesson is clear. It shows what expert merchants in this line of business think about the way goods should be merchandised. Yet there are concerns selling accessories in this town who do not think that a store is worth while

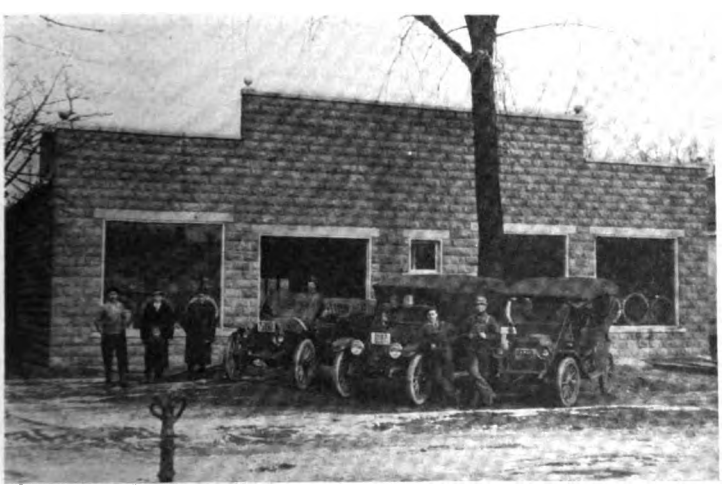


Another closeup of a modern merchant's store front equipment, showing that it pays not only to have a store but a store which makes a strong appeal. Essentially there is no difference between accessories and dry goods. Both are merchandise and what holds for one should hold for the other

Fine Store Buildings Are the Rule in Many Lines—They Are Just as Essential for Selling Cars and Accessories



A big jump in the right direction. A fine showroom, unoccupied, on the left, and an accessory store with a neat, appealing window on the right. The building itself is very little more expensive than the less attractive ones shown on these pages. It is simple in design yet very appealing.



Perhaps this building might be considered a small step in the right direction. It has three display windows in which tires are neatly arranged and it is possible that a store is concealed behind one of them. However, no one will question that there are more attractive stores in this town. There is no reason why the garage store should not be the leader instead of the trailer. The first step is an attractive building—often it does not cost any more than an ugly one



Accessories are sold, but there is no store in this neat garage, and no showroom although the most popular car is sold here. Every other merchant in this town doing the volume of business that this concern is doing has an attractive store with fine displays of goods. The initial mistake was made when the building was erected. A more skillful architect could have made a very handsome building from the same material, without additional expense

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"WE DON'T NEED AN ACCESSORY STORE," SAY MANY DEALERS AND GARAGEMEN, "BECAUSE WE DON'T SELL VERY MANY ACCESSORIES." VERY OFTEN THE REASON THEY DON'T IS BECAUSE THEY HAVEN'T THE TOOLS TO WORK WITH, WHICH ARE: A STORE, ADEQUATE STOCK AND PROPER METHODS.

passer-by, but instead of being merely a billboard a store is a life size advertisement of the actual articles which are on sale. It is much more vivid and therefore much more interesting and convincing than a billboard. How much superior a real car in the showroom window is to a picture of a car on a billboard! The same holds true for displayed accessories.

Every foot of frontage must be looked upon as valuable advertising space and the most made of it. Unless the front is a series of show windows the space is wasted.

What the Showroom Does

The car in the showroom window advertises the fact silently, but nevertheless effectively, that this car is for sale at this point; also it silently attests that this dealer is live enough to appreciate the value of a showroom, and in a section where showrooms are rare this is a tremendous point of advantage.

Every time a man passes the showroom and sees a car he must be a little more favorably impressed with it because increasing familiarity with any object results in an increasing favorableness of attitude toward it. It is a principle which everyone is familiar with yet few recognize until it is stated. Because Brown has known his next-door neighbor for 20 years, he refuses to believe that Brown is guilty when he hears that he has been arrested for forgery; because Smith's best friend has a Blank car and Smith sees that car every day, he feels that it is a little better than most other makes, not because he knows anything good or bad about it but simply because he is getting more familiar with it. The same principle holds true in selling cars.

Seeing the car in the windows daily, the prospect finally is tempted to the point where he comes in to look at it, and whether the sale is made or not depends in a large degree on what the prospect sees after he comes to talk about the car. If the showroom surroundings harmonize with the car, the prospect unconsciously obtains so much the better opinion regarding it and the sale is much easier. Furthermore, the fact that there is a showroom suggests that it is isolated from other departments, such as the accessory store, the shop, the garage, the office, and consequently there is little possibility of outside noises intruding to divert the prospect's attention from the salesman's arguments.

When a car is displayed in some noisy, dirty corner of a garage, or in a clean garage for that matter, the eye of the prospect slides off from the car to various other details. He may see oil and dirt on the floor and cobwebs on the wall or dilapidated cars a year or two old which may remind him of what this new car will look like a year hence. He gets a number of subconscious impressions which, taken all together, may be his estimate of the car. The impression he carries away is not the impression of the car alone but is the average of the car and its unfavorable surroundings.

Stated another way, the car should be displayed in fitting surroundings. When shown in a garage the picture around the car is unfavorable. Therefore, the impression of the car must be more or less the same. It may be partially hidden by other cars, in which case the proper estimate of the lines cannot be obtained.

The light may be poor. It usually is in garages. Consequently the owner cannot see the various details as they are pointed out to him.

It may be noisy; cars are passing, there is loud talking and sometimes it is impossible to hear because of someone adjusting a carbureter or something of the sort. All these things, even the movement of the cars, must distract the attention of the prospect, hence much of the time the salesman spends in trying to sell a car under these circumstances is wasted effort. It means that if he does land a prospect, he must spend a great deal more time on him, and then the chances of landing him are much smaller than if he were selling the car in a showroom.

Showroom Not An Extravagance

The showroom is not such a great expense expressed in terms of interest on the investment; it is only a few dollars a month. It does not take up as much space as it might seem to at first glance. The cars the dealer uses for show purposes must be stored in any case, and if they are placed in the garage these few cars could hardly be stored conveniently in a space of less than 7 x 50 ft., including the usual amount for aisle way. This is equivalent to a room 14 x 25 ft., which would almost be large enough to comfortably store two cars.

An attractive showroom, on the other hand, will enhance the appearance of the car. Probably the best example of this in all the country is the Willys-Overland showroom in New York. Its decorations are simple, but in very good taste, with the result that a man not familiar with the Overland line would be quite justified in putting these cars in the $2,000 to $4,000 class. So the importance of obtaining a setting which will enhance the appearance of the cars cannot be over-estimated.

In selling accessories, the goods must be seen to be sold. It is true, of course, that the garageman might make an occasional sale even if he had his stuff locked up in a safe, but the garageman who does not average much over the sale of the article per customer is not making very good use of his opportunities. The object of the game is to raise the average to two or three or more articles per customer and this cannot be done unless proper sales methods are used. The first step in this direction is to have all goods properly displayed, have everything in sight. For this reason, shelves are preferable to drawers. But this is getting too far into detail. However, it shows the absolute necessity for an accessory store. Unless a customer can see practically the whole stock of goods, he is quite likely to forget some of the things that he wants. On the other hand, if he walks into the store in an absent-minded fashion for a spark plug, thinking that is all he needs, before he has left he may see several things that he wants and may buy them, yet if he had not seen them he never would have thought about them.

An accessory store offers a means for properly and attractively displaying goods, and without one this cannot be done. It is an advertisement, just the same as if it were in a magazine or on a billboard. The whole store is an advertisement of the goods that are there for sale.

Indicates Liveness

The possession of a showroom or an accessory store is a mark of progressiveness. Automobile owners are progressive businessmen; if they were not, they would not own automobiles, because, as a rule, they would not have mon y enough. Progressive methods appeal to them. They like to deal with progressive people, and the most obvious way of showing progressiveness is to have a showroom and an accessory store for the sale of cars and accessories. But more than that, it is necessary to have them attractively furnished and operated in an up-to-date manner. Just to have them is not sufficient.

In conclusion, the showroom is an essential for the man who sells cars, and the accessory store is an essential for the man who sells accessories, because he cannot operate at his maximum point of efficiency without them. He cannot obtain maximum results. They make the sales easier. He is not taking full advantage of his location as a point to attract trade, he is not taking full advantage of the trade he attracts, inasmuch as the conditions are not right for selling, consequently, a large amount of his personal effort and the effort of his employees must be wasted.

"WE CONCENTRATE ON CAR SALES AND CAN'T BE BOTHERED GOING AFTER THE SMALL ACCESSORY SALES." MANY DEALERS, IN SMALL TOWNS AS WELL AS LARGE, EXPLAIN. THE AVERAGE OWNER SPENDS 25 PER CENT OF THE PRICE OF HIS CAR *each year* ON ACCESSORIES. THERE IS NOTHING SMALL ABOUT THAT!

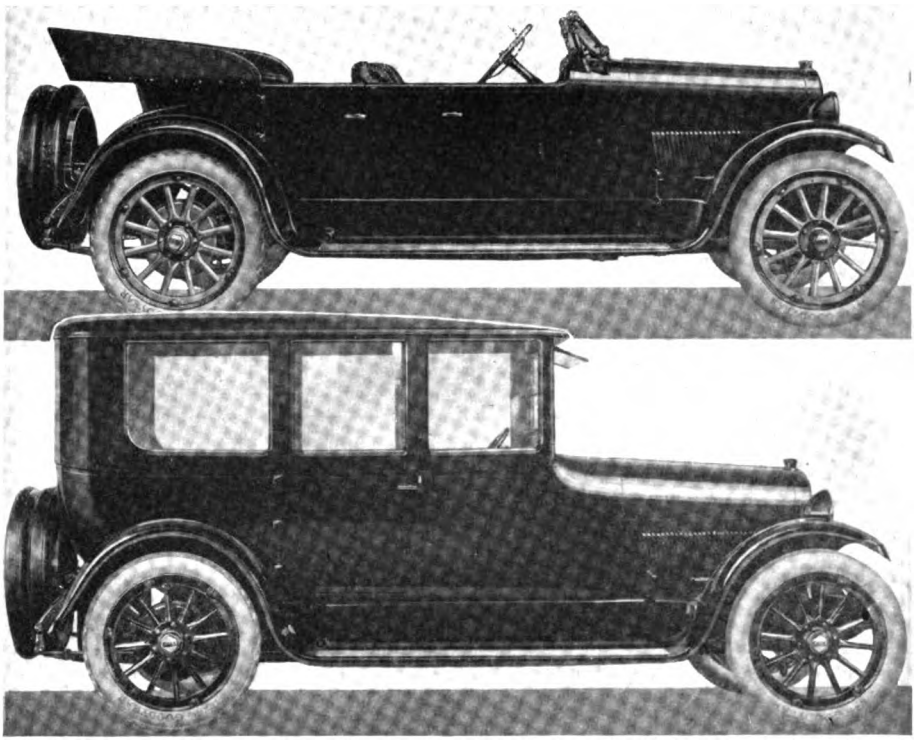
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Continental Engine in New Case Six

Three Bodies on One Chassis—Touring Model $1875

New Case Six

Touring	$1,875
Sport model	$1,875
Limousine Springfield sedan	$2,375
Color	black
Make of motor	Continental
Number of cylinders	6
Shape	L-head
How cast	block
Bore	3½
Stroke	5¼
S.A.E. horspower	29.4
Ignition	Westinghouse
Carbureter	Rayfield
Starting and lighting system	Westinghouse
Clutch	Borg & Beck
Gearset	Grant-Lees
Wheelbase	125 in.
Front tires	35 x 4½
Steering gear	Jacox
Make of axles	Columbia
Type rear axle	three-quarter floating



The new Case car has an entirely redesigned body in addition to its new Continental engine. The open car is the Sport model at $1,875, *and the other is the Springfield type sedan at* $2,375

A BRAND new model, with a six-cylinder Continental engine and selling for $1,875, has been brought out by the J. I. Case T. M. Co., Racine. There will be three bodies on this chassis—a touring model, a four-passenger sport model, both at the same price, and a Springfield sedan at $2,375.

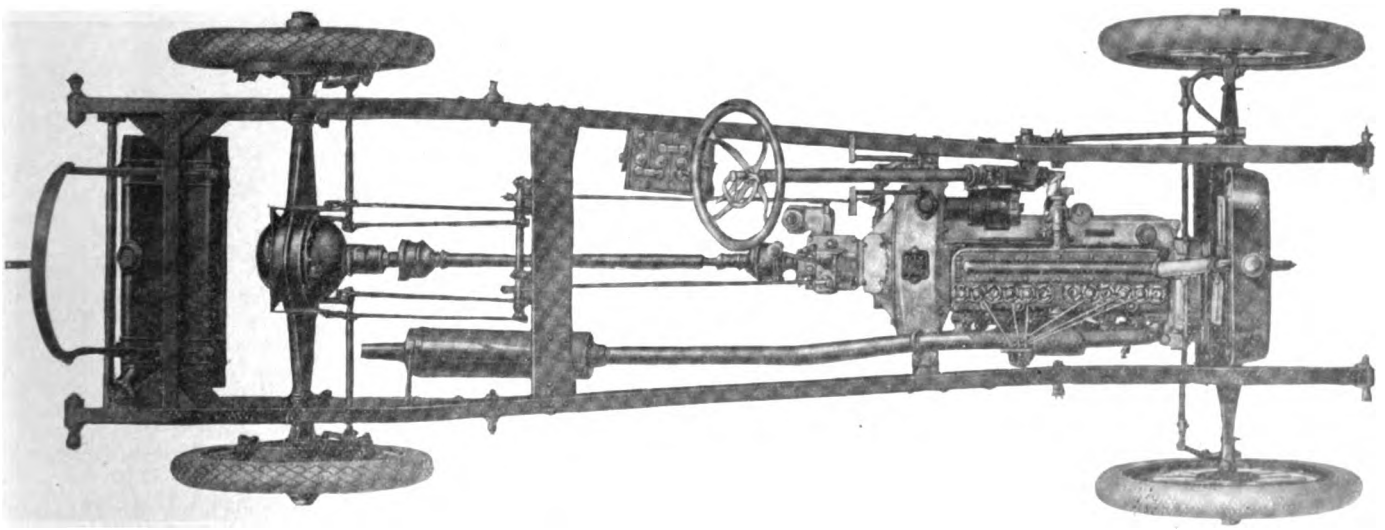
The car is quite different from the previous four-cylinder model and has a wheelbase five in. longer, larger tires and a modern and roomier body. Despite the increase in size, however, weight has been reduced 400 lbs.

The engine is en bloc with cylinders 3½ x 5¼. It is equipped with a Rayfield carbureter and Stewart vacuum feed, with 18-gal. tank carried at the rear, Westinghouse electrical equipment, in which separate units take care of engine starting, lighting and ignition. This is combined with a Willard 90-amp. hr. battery.

A ten-inch Borg & Beck disk clutch transmits the power to a Grant-Lees three-speed gearset, the latter fitted with S. K. F. double-row ball bearings. Two universals are employed in the transmission shaft, to the Columbia three-quarter floating rear axle, which has a reduction of 4 5/11 to 1, through a spiral bevel final drive.

The Case Company has abandoned the cantilever in favor of the underslung half-elliptic springs as the rear suspension. Spring eyes are equipped with anti-squeak bronze bushings. The steering gear is a Jacox, with 18-in. corrugated wheel. Taking of the drive by the full Hotchkiss method through the springs to the frame has resulted in an extra deep channel section of the latter. The frame measures 6 in. in depth.

Air for tires is supplied by Stewart pump driven from the gearset, with the



The Case chassis is exceptionally clean, though substantial construction has not been sacrificed to accessibility

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drive gears enclosed and running in oil. The Stewart speedometer likewise is driven from the change speed mechanism and also operates in oil.

In the appearance of the car as a whole, there is very marked improvement, the design being modernized to the last minute. As compared with the four-cylinder, the radiator is taller, and the shoulders of the hood have been brought up to give the smooth, straight slope from radiator to cowl. The shield at the front of the radiator has been brought down to a decided inverted V and the whole front is flatter and at the same time more graceful. The top of the body line from cowl to rear seat is horizontal and seat-backs in both the Family car and the Sport model project several inches above this line. The whole design gives a conception of comfort and speed which is enhanced by the decidedly sloping, folding windshield.

Rainy day comfort is provided by the use of curtains which open with the doors. When not in use, these curtains fold into the top. Marshall type cushions are among the comfort features. The interior furnishing of the car comprises mahogany paneling in the cowl board and in the rear of the front seat. Extra seats disappear into the backs of the divided front seats and are dust-proof. Tonneau lights are arranged in the backs of the front seats, headlights are of the double bulb type and are adjustable horizontally and vertically. Tire carriers are provided for either one or two spare tires, or one wire wheel, and wire wheels on all models are supplied as extra equipment.

Add the Tax, Say Dealers

(*Continued from page 7*)

tomers by adjusting our prices to cover the tax. Dealers cannot absorb a tax of 3 per cent, as average profits equal only that sum."

F. W. A. Vesper, of St. Louis, says: "Tax should be collected as such from the consumer as the law provides; but it should include all owners, thus not discriminating against the prospective purchaser which it does in its present form."

Both W. W. Barnett and Tom Botterill, Denver, say: "We shall collect from consumer as direct war tax."

What Minneapolis Says

MINNEAPOLIS, Oct. 1—Dealers and distributers here say they cannot absorb the 3 per cent tax and that it must be passed on to the consumer. It is preferable to add the tax to the customer's bill the same as freight is added.

H. E. Pence says: "One per cent tax on all cars rolling would have provided twice as much revenue and not one would have felt the burden. Dealers positively cannot absorb the tax, as they have no leeway. This tax puts a premium on the man who buys a new car."

J. A. Graham, Studebaker dealer, says he has information the factory will collect the war tax the same as freight from purchasers.

The W. E. Wheeler Northwestern Automobile Co. will collect the tax from the car purchaser the same as freight. Roy D. Simning, secretary of the Minneapolis Automobile Trade Association, states that no dealer makes enough profit to absorb the 3 per cent tax and exist.



Milwaukee Not Decided Yet

MILWAUKEE, Oct. 1—Until Milwaukee Automobile Dealers' Association holds a special meeting for consideration of methods of procedure under war revenue bill none will venture definite information relative to steps likely to be taken. The concensus of opinion, however, is that war tax will be added to the selling price to consumer in same manner as freight is now added, the dealer acting as collector of tax for distributer who in turn will make collections for the manufacturer.

Dealers may be asked to absorb a small part of tax but bulk will surely be passed to consumer.

Important point brought out is that the tax will expose to public view the rate of profit of distributer and dealer if charged forward strictly at 3 per cent to consumer with the result that a small percentage may be absorbed or even added to keep distributers' and dealers' prices secret and not make them everybody's business.

Makers Not Apprehensive

DETROIT, Oct. 1—Manufacturers do not believe that the new tax will have an important effect on the automobile industry, although they anticipate a slight decrease in business which always follows an increase in cost.

None of the manufacturers has arranged definitely the plan of procedure following the passing of the law but the general impression is that all manufacturers will pass the tax to the consumer through the distributer and the dealer, allowing the dealer to either add to his selling price or to add separately to the transaction sufficient to include the cost of the tax.

The Ford Motor Co. anticipates some such plan as this but can not say definitely what it will do until Ford officials hold a conference this week. The Buick Motor Co. will hold a conference later in the week to decide upon its plan. Neither Chalmers or Maxwell have made any arrangements to care for the increase and will be unable to provide for it through the present prices but anticipate that the tax will be passed on to the consumer through the distributer and dealer. The Paige Motor Car Corp. has arranged with dealers through contract made in the past six months by which the dealer will have to care for any tax imposed and can pass it on to the buyer.

The Hudson Motor Car Co., Packard Motor Car Co., Reo Motor Car Co. and all other concerns take the same view of passing the tax onto the consumer.

Many of the executives of these concerns believe that the tax will create harm among the dealers inasmuch as many dealers will sacrifice part of the tax cost in the effort to sell the cars and all manufacturers take the view that the tax should have been placed directly on the motorists of the nation rather than the indirect tax which it is now contemplated to impose.

There are between 70,000 and 100,000 motor cars in the hands of dealers and distributers throughout the country on which the tax of 1½ per cent is applicable.



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Chicago Accessory Show Succeeds

Most Exhibitors Report Plenty of Business—Set Dates for Next Show

CHICAGO, Oct. 1—Now that the first National Accessory Show for Fords is history and after a thorough canvass of the exhibitors for information on business done, the old phrase, "Came, saw and conquered" seems fitting in referring to this particular angle of the show. Inasmuch as this was the initial exhibition of this kind, exhibitors were not over enthusiastic before the doors opened, but before the seven days were completed they had written as much business as they would have had any right to expect had this been the fourth or fifth annual exposition of its kind.

Some of the high spots during the week's business were these: Wire Wheel Corp. of America sold 250 sets of Houk wheels the first night; closed contracts for an entire state, did $50,000 worth of business during the week; and sold twenty-four sets of wheels outright at the show.

Simplex Mfg. Co. closed one deal for $10,000.

Auto Pedal Pump Co. closed contracts for the sale of 80,000 pumps at $5 each.

One top manufacturer disposed of three carloads.

The Auto Remodeling Co., Chicago, sold sixty bodies and has prospects for 100 more.

Attendance figures during the seven days total 51,039, of which 3 per cent represented paid admissions. Fifty per cent of the attendance was out-of-town people, and the remainder Chicago people. It is estimated that of the total attendance, 25 per cent represented dealers and jobbers, and 75 per cent car owners.

Dates for next year's show have been set for Sept. 23 to 28 inclusive and practically all exhibitors have signified their intention of taking space. Forty-one manufacturers that were not here this year already have agreed to exhibit next year. The Chicago office will be closed this week, and the business of the show handled by Manager H. F. Buelow from Toledo, Ohio, until March 1, when offices will be re-opened here.

The class of people that visited the accessory show is declared by exhibitors to have had a greater percentage of real buyers than is usual at the national winter shows. Of course, this might be expected, since those who visit a motor show find something of common interest in the new models whether they buy or not, while those who would visit an accessory show very likely would be interested because they were car owners.

The Bailey Non-Stall Differential Corp., Chicago, signed up with a number of new jobbers, and did much more business than would be anticipated. This company reports the show to have been a success from its viewpoint, and while a large part of the actual business consummated was with jobbers, there were a number of retail sales, and besides much interest shown by garage and service men throughout the week. It is understood that there was a government man investigating the differential for government work, and during the week there were a number of visitors from several of the large motor car companies.

The Hassler Distributing Co., Chicago, closed five contracts for 50 sets of shock absorbers, and sowed propaganda seed which is expected to result in much new business during the fall.

The Ahlberg Bearing Co. did not transact much business. It did not go into the show with the expectation of closing sales, but rather to advertise its product to the dealer and garageman.

The H. G. Paro Co. closed over $7,000 worth of contracts with jobbers.

Brown & Caine, Inc., Chicago, did a good business in ignition supplies with jobbers, and is well satisfied with the results of the show.

The Metal Specialties and Mfg. Co., Chicago, took the first order of the show one-half hour after it opened, the order totaling $1,000. This was a forerunner of a week of successful selling, mostly to jobbers, although some of the newer specialties made by this company were sold at retail. Several new jobbers were signed up at the show and this company was awarded the blue ribbon for the most artistic and easily analyzed exhibit in the coliseum.

Chicago Pneumatic Tool Co. showed a kerosene generator and a truck forming attachment. On the latter business it was somewhat slow, although on the generator officials of the company say they benefited from this advertising as they could have in no other way possible. The exact figures on sales have not been compiled, but it is known that over 100 generators were sold in Chicago alone and sales outside Chicago were equally good; sales were about equally divided between dealers and owners.

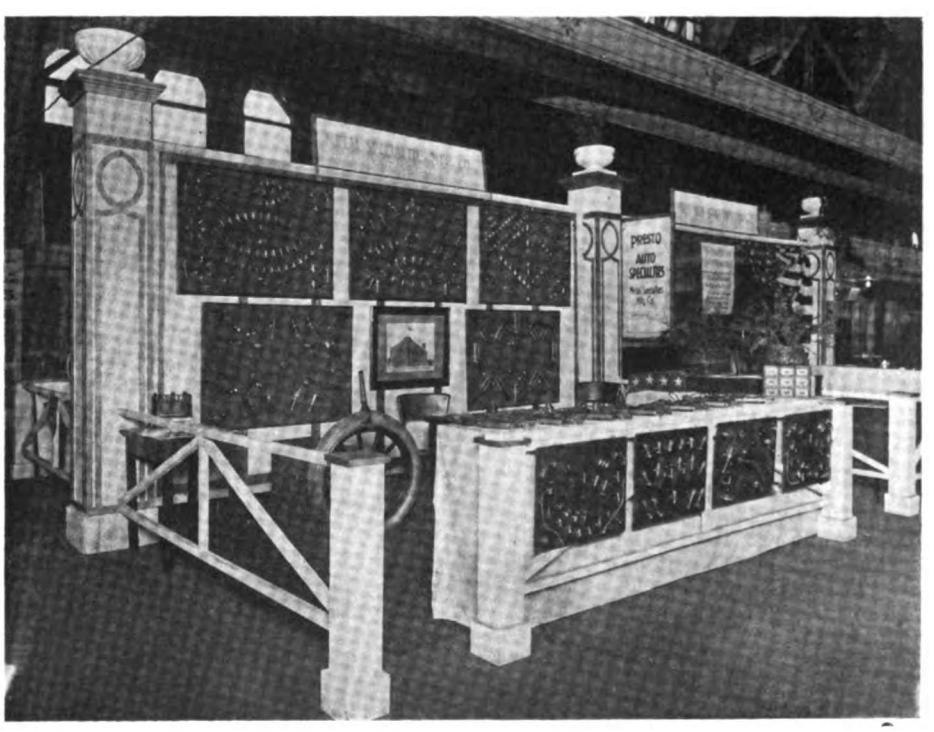
Two truck making attachments concerns—Smith Form-a-Truck Co. and the Redden Motor Truck Co., Inc.—were the only ones found who did not feel the results of the show warranted the expenditure of exhibiting.

Kaufman-Morris Gets Nash

NEW YORK, Oct. 1—The Nash car, which up to quite recently was handled by the Poertner Motor Car Co., has been taken over by the Kaufman-Morris Co., which recently leased the Fiat building at the corner of Broadway and Fifty-seventh Street.

Make 120 Sterns Tubes a Day

ST. LOUIS, Sept. 30—William L. Burgess, president of the Sterns Tire & Tube Co., announced to-day that an output of 120 Sterns tubes had been reached at the factory on Kienlien Avenue. This has been accomplished with machinery which has been removed here within the last few weeks from the experimental factory at Marion, Ohio, which has been closed. New machinery has been ordered to increase the output to 200 tubes daily by Dec. 1. Still greater increases are planned later.



The exhibit of the Metal Specialties & Mfg. Co. was judged the best and given the blue ribbon for the most artistic and easily grasped display

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Government to Control All Steel Prices Soon

Expected That This Will Come About in a Fortnight—Expected to Help in Lowering Costs

WASHINGTON, Oct. 1—Within a reasonable time, it may now be confidently stated, the entire steel trade is to be placed under government control as regards prices. This action will come, regardless of the fate of the Pomerene bill now before the Senate, and which provides government control of iron and steel products. The difference, in the event the Pomerene bill should become law, would be that the Government would have specific authority to name the maximum price for every article in the iron and steel trade.

Should the Pomerene bill fail, then the Government will enter into agreements, as in the case of the recent fixing of prices for plates, shapes, bars and pig iron, with manufacturers and the War Industries Board will bind the latter to charge stipulated prices for about 150 articles. These prices also will apply not only to the United States Government, but likewise to the Allies and the general public.

All of the manufacturers were not parties to the agreement recently made as to prices on certain articles, but it is planned, it is understood, when additional agreements are entered into, to include all of them.

Even with those already included, the question of quantity production, it is said, will enter very largely into the satisfactory carrying out of the agreements as, if the Government will agree to take certain stipulated large quantities, then all well and good, the plants can be operated with a prospect even of a decrease below the prices fixed, in some instances.

Should the manufacturers fail to get this assurance, and not be satisfied with the prices to the extent of failing to manufacture in sufficient quantities, then the Government could, and might exercise its authority and take over production.

Under rates fixed the prices of iron ore and coke have been left so high, these being the two principal ingredients of pig iron, that the big manufacturers who own their own ore mines, transportation lines, coke ovens and blast furnaces will have a big advantage over the smaller or independent companies.

For instance, the United States Steel Corp., the Bethlehem Steel Co., the Jones & Laughlin Co., and other big manufacturers can, it is pointed out, sell easily at the Government's prices.

The price of $6 a ton for coke is thought to be the most liberal allowance and one apt to prove a factor to the larger concerns in determining their profits, it being at least twice the price charged in normal times, even though much lower than the recent quotations on coke.

The larger manufacturers, however, as a rule control their own coke supply. The price of $65 a ton for steel plates, though, is lower than was anticipated, and it had been predicted that the Government would allow as much as $70 in order to give the smaller manufacturer a good profit, this sum being suggested as a low one under present circumstances.

Stutz Concentrates on 16-Valve

INDIANAPOLIS, Oct. 1—The Stutz Motor Car Co. will concentrate on its four-cylinder, 16-valve engine which will be used on four new models this coming season. The eight-valve engine offered optionally last year has been dropped. The four models are: the Bearcat on a 120-in. wheelbase, at $2,550; the roadster at $2,550, formerly $2,375; the four-passenger, $2,650, an increase of $100; and the six-passenger, $2,750 instead of $2,550. The last three have a wheelbase of 130-in. Cylinders are 4⅜ x 6 and are block cast. Fuel is pressure fed. Other features include Stromberg carbureter, separate Remy units for starting and lighting, and high-tension magneto for ignition. Body changes show marked departures from the last series. The bodies have a smoother outline, the hood and radiator shapes have been changed and the double cowl in the four- and six-passenger models has been removed. The Bearcat body has been little changed aside from its radiator and hood.

Minneapolis Joins National Body

MINNEAPOLIS, Oct. 1—The Minneapolis Automobile Trade Association has voted to become affiliated with the National Automobile Dealers' Association. The association will pay the dues of all members in the National body. A proposal to close all dealers' places of business at 12:30 on Saturdays was voted on favorably, and dates for the annual show were set for February 2-9.

Loewus Heads Bronx Dealers

NEW YORK, Oct. 1—The Bronx Automobile Dealers' Association, which was formed recently and is considering running a show, has elected the following officers: President, E. W. Loewus, Concourse Motor Car Co.; vice-president, John B. Elsey, Dodge agent; treasurer, D. J. Barrett, Bronx County Auto Co.; secretary, J. Lloyd White, White Bros.

St. Louis Tests Lamps

ST. LOUIS, Oct. 1.—Street Commissioner Talbert has issued an invitation to motor car owners to come to the City Hall and have their lights tested. This is preliminary to a drastic enforcement of the lighting laws. The officials are determined to do away with glare. All tested lamps, if approved, are marked with a small red disk pasted on the glass, which is varnished over for protection.

$5,368,546 Is Maxwell Profit for the Year

Quarter of a Million Better Than Last Year—Sales Contracts Are Now 32% Ahead

NEW YORK, Oct. 1—The annual report of the Maxwell Motor Co. shows net profits for the fiscal year ended July 31, 1917, of $5,368,546, compared with $5,088,994 in the 1916 fiscal year. Earnings are equal to 29.63 per cent on the $12,778,057 common stock after allowing for dividend requirements of 7 per cent on the first preferred and of 6 per cent on the second preferred, against 27.53 per cent earned in the preceding fiscal year. Net earnings amounted to $5,342,728, against $5,531,034 in the preceding year. The net income amounted to $5,507,697 after deducting a corporation income tax of 2 per cent and without any deduction for an excess profits tax.

In the report to the stockholders, president Walter E. Flanders stated: "The number of cars sold by us during the past fiscal year shows an increase of 39 per cent over sales the previous year.

"The net working assets of the company and its subsidiaries at the close of its fourth fiscal year are $12,280,977. The inventories have been taken at actual cost; we have no obsolete materials of any kind in our factories.

"The American Appraisal Co. advises us that the net sound or present day values of these properties, after deducting depreciation reserves of $2,215,296, is $8,305,389, or $2,909,650 more than the net figures at which we carry them on our books.

"Sales contracts with distributers have been signed for 32 per cent more automobiles of all models than had been contracted for at the same period last year."

The refinancing of the Chalmers Motor Corp. has been completed, and all the $3,150,000 first mortgage 6 per cent 5-year notes of the company have been taken by the shareholders and C. D. Barney & Co. and J. S. Bache & Co.

The income account of the company for the fiscal year ended July 31 last compares as follows:

Net Earnings

1917	1916	1915	1914
$5,342,728	$5,531,034	$2,337,950	$1,430.445

Profit and Loss Surplus

1917	1916	1915	1914
$8,017.444	$5,510,775	$3,171,794	$1,505,468

The balance sheet shows assets of $50,804,146, compared with $46,841,241 the previous year. Goodwill is listed at $25,457,363, compared with $26,190,469 in 1916.

St. Louis Takes in Two More

ST. LOUIS, Oct. 1—These new members of the Motor Accessory Trade Association are announced: Battery Service Co., Eureka Auto Parts Co., Wielandy-Reller Auto Equipment Co.

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St. Louis "Open Week" Given Winter Flavor

Planned for All Dealers to Show Closed Cars Exclusively—Special Exhibit of Trucks

ST. LOUIS, Oct. 1—The "Open Week" exhibit on "Motor Row" next week is being advertised as "Fall and Winter Car Exhibit." Practically all dealers have been assured by factories of closed cars for the week and in most of the salesrooms only closed cars will be shown. It is the present hope that all dealers will be able to show the closed cars exclusively.

The affair will be less pretentious than the "Open Week" of last year because the City Fall Festival Committee cancelled the usual pageantry that drew thousands of visitors to the city. This year's exhibit is planned to appeal only to the city and immediate community and visitors are expected chiefly in the evening.

The outstanding features will be the housing for the week of all motor car distributors on "Motor Row." To do this, it will be necessary for some of the Motor Row firms to share their salesrooms with firms having headquarters elsewhere.

A special exhibit of trucks will be made on Garrison Avenue, the city street department having granted the use of the roadway for one block on each side of Locust Street, where extra lighting facilities will be provided. The dealers have agreed upon a common design of sign for the week and that each will distribute lists of all exhibitors and will keep a car in service to take any inquirer to a rival's exhibit room.

To Make Simplex Tractors

WICHITA, KAN., Sept. 29—The Simplex Tractor Co. has been incorporated here with a capital of $300,000 and will erect a plant and manufacture 1000 farm tractors per year. Incorporators include James P. Sullivan, O. D. Barnes, R. C. Fisher, W. Magill, C. Franks, F. O. Stone, I. N. Williams, Henry Bockelman and A. E. Alport. The Simplex tractor burns kerosene and uses one lever for control. There are two forward speeds and one reverse.

Doesn't Want Ford's Plant

DETROIT, Sept. 28—The War Department has decided not to accept the Ford factory and assembling plant at Cambridge, Mass., for use as a quartermaster's depot because it would throw too many employees out of work.

To Make Master Primers

DETROIT, Sept. 29—E. T. Daniels, secretary of the Master Carburetor Corp., is incorporating a new concern which has purchased the patents covering the primer which the Master company has been marketing and which has already been adopted by the Franklin Automobile Co. as standard equipment. The company will organize and erect a factory in Detroit.

Packard Dealers Have $20,000,000 Invested

DETROIT, Sept. 28—The Packard Motor Car Co. has just determined that more than $20,000,000 is invested in plants and stocks by Packard dealers who transact a gross business of $70,000,000 per year and employ 6455 workers. More than $11,000,000 of which gross investment is represented by buildings, and $4,676,000 worth of building construction is now under way.

Cleveland Plans 8000 Tractors

CLEVELAND, Sept. 28—The Cleveland Motor Plow Co. has changed its name to the Cleveland Tractor Co. and is arranging plans to increase the capital stock from $600,000 to $6,000,000. Of this, $600,000 will be issued now, making $1,200,000 outstanding. It is anticipated that the greatest part of the new stock will be taken by the present stockholders at par. F. H. Goff, a director of the company, says: "Additions are being built which will give the company a capacity for 8000 tractors next year."

Connecticut Wants Mirrors

HARTFORD, Sept. 29—From present indications all touring cars with the tops raised will be required to carry mirrors or reflectors in order that drivers may see just what is approaching from the rear. Commissioner of Motor Vehicles Robbins B. Stockel has called the attention of the police department to violations of the law in this respect. In police circles there is a difference of opinion as to just what the last legislature implied when it passed the mirror clause and at that time it was given out that the ruling applied to trucks.

Du Pont Offers a Road

WILMINGTON, Oct. 1—General T. Coleman du Pont of Wilmington, who some time ago announced his intention of building a boulevard the entire length of the state of Delaware, 100 miles, and presenting it to the state, on certain conditions, has just informed the State Highway Commission that he has withdrawn all conditions and is willing to complete the boulevard and present it to the state without any restrictions.

Federal Teaches Truck Service

DETROIT, Sept. 29—The Federal Motor Truck Co. is conducting a three-day motor truck school for service men at its factory this week and has service men from fifteen important distributing centers in attendance.

Saxon Producing 100 a Day

DETROIT, Sept. 29—The Saxon Motor Car Corp. is now producing 100 cars per day and has a large number of unfinished orders on hand

Hudson Men Organize Company for New Car

Essex Co. Will Be Entirely Separate and Will Produce Lower Priced Car—The Plan

DETROIT, Sept. 29—Members of the Hudson Motor Car Co. are forming a new company to be known as the Essex Motors Co. which will have a paid capital of $500,000 and will bring out a new model which members of the company think is amply demanded by new conditions.

The new car will not conflict with the Hudson models and the new company will have no direct connection with the Hudson Motor Car Co. Officers of the new company are: W. J. McAneeny, factory superintendent of Hudson, president; R. B. Jackson, secretary and treasurer of Hudson, vice-president; A. Barit, purchasing agent of Hudson, treasurer; J. L. Vette, secretary. In addition to these the board of directors will include Roy D. Chapin, president of Hudson; O. H. McCornack, sales manager of Hudson, and F. O. Bezner, vice-president of Hudson.

The new car will be announced at a later date. It is reported that the car will sell at a price considerably lower than the Hudson cars. A separate factory will be selected and announced in the near future.

Kelly-Springfield to Expand

CUMBERLAND, MD., Oct. 1—An investment of $5,000,000 is provided for in the final plans of the Kelly-Springfield Tire Co., Akron, for the plant it intends to build here, instead of the $2,250,000 factory mentioned in the early part of the year.

The $5,000,000 will be invested in improvements, buildings, machinery, etc., the manufacturing facilities now planned contemplating an annual capacity of over 400,000 tons of automobile tires and other similar supplies. The tire capacity alone will range from 4000 to 5000 a day.

Shotwell Tank Sees Trouble

INDIANAPOLIS, Sept. 29—A receiver has been appointed for the Shotwell Pump and Tank Co., manufacturers of gasoline tanks and pumps of this city, James M. Ogden, an attorney, being named receiver. The action followed the filing of an involuntary petition in bankruptcy against the company by the Edward Mason Co., Indianapolis, which alleges that the plaintiff is insolvent.

Carlisle Starts Manufacture

NEW YORK, Oct. 1—The Carlisle Cord Tire Co., which was formed a short time ago and has its factory in Andover, Mass., is now in active production. Representation has been arranged in a large number of cities.

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Prominent Tradesmen Assume New Duties

Resignations and Promotions Place Workers in New Places

James F. Bourquin, vice president of the Liberty Motor Car Co., has been summoned to Washington to assist in the production of army trucks.

R. W. Fontaine, formerly special foreign representative of the Willys-Overland Co., Toledo, has resigned from the Cuban Auto Importing Co., Havana, selling Stutz and Cole cars, to take charge of the sales department of the Havana Auto Co., representing Renault, Pierce-Arrow, Mercer, Premier, Hupmobile and Anderson.

Lieutenant H. G. Shockey, president of the Denby Detroit Sales Co., has been ordered to report for duty in command of a motor truck company at Camp Custer.

P. H. Fonda has joined the United Motors Service, Inc., representatives of the Delco, Klaxon and Remy companies, as office manager, with headquarters in this city. He was formerly with the Dayton Engineering Laboratories Co.

A. L. Martin has joined the staff of the Edward A. Cassidy Co., New York, in the capacity of Western manager, with headquarters at San Francisco. He was formerly sales and accessory manager of the Western and General Tire & Rubber companies.

John F. Luhrman has taken over the Cincinnati local distributing agency of the M. J. Moore Co. He was formerly with the Stearns-Knight sales department.

H. C. Biggam, who was formerly with the Nordyke & Marmon Co., Indianapolis, has become sales manager of the Western Motor Car Co., Cincinnati.

P. S. Tice, who has been in the experimental department of the Hupp Motor Car Corp., has severed his connections and is now doing consulting work.

O. J. Rohde, formerly president and general manager of the Splitdorf electrical branch in New York, has resigned to become director of service of the Wire Wheel Corp. of America. This corporation will establish service stations in all the large cities of the United States.

R. H. Southerland, formerly foreign representative of the Splitdorf branch in London, has become manager of all the Splitdorf branches, with headquarters in New York.

W. P. Berrien, vice-president and sales manager of the Batavia Rubber Co., has resigned. He was at one time connected with Firestone, Packard, Standard Automobile and other companies.

Webster Colburn, second vice-president of the Ferris Motor Car Co., St. Louis, has severed his connection with that company to take up a new venture which he is not yet ready to identify.

Lee M. Pierce, for several years in the motor car trade at St. Louis, has been made manager of the used car department of the Grande Motors Co., that city.

Thomas G. May of the Ford branch, St. Louis, has been promoted to wholesale manager.

Albert R. Chappell, president of the Imperial Oil Co. of St. Louis, has been called to the Scott Aviation Field, near that city, to conduct a series of tests of oils for the Army aeroplanes being used there.

Lucien F. Jalageas, recently with the Kardell Motor Car Co., St. Louis, has joined the Reo branch in Chicago.

W. R. Rose has resigned as retail sales manager of the Albany, N. Y., branch of the Willys-Overland Co.

Arthur M. Goodfellow has been appointed Western sales manager of the Nice Ball Bearing Co., Philadelphia. He was formerly associated with the Standard Roller Bearing Co.

Walter A. Almy has been made manager of the Carriage Sales Department of the Packard Motor Car Co. of Philadelphia.

Fred L. Bragg has joined the sales department of The Britton Co., Hartford, Conn. Formerly he was with the Overland Hartford Co.

John W. Kemp has left the A. C. Hine Co., Hartford, Conn., Chalmers and Oakland distributer, to become sales manager of The Colonial Automobile Co., Studebaker distributer.

H. J. Vogler has resigned as metropolitan wholesale manager of Willys-Overland, Inc., to accept a commission as captain in the Ordnance Section of United States Army.

J. P. Howard, former Hupmobile distributor in Wilmington, Del., has joined the sales force of the Barry Motor Co., Washington.

Arthur Collins, prominently known in motor circles in the East, has succeeded A. A. Crumley as manager of the Combs Motor Co., Washington, Chalmers and National dealer.

A. B. Walton, sales manager of the Master Carburetor Corp., resigned Oct. 1. He will announce future plans later.

H. J. Flint, general sales manager of the J. C. Wilson Co., truck makers, has resigned. New connections will be announced later.

R. S. Morris has become production manager of the Monitor Motors Co., Columbus. He was formerly associated with the Packard Motor Car Co., Detroit.

A. L. Washburn has been appointed manager of the Landover Truck Co., Menominee, Mich. He is superintendent of the Brown-Mitcheson Lumber Co.

F. P. Soper, manager of the order department for the Federal Motor Truck Co., has been promoted to assistant sales manager.

E. W. Winans, who was formerly chief engineer for the Regal Motor Car Co., has been appointed service manager for the Federal company.

Lee O. Miller has been appointed manager of the New York branch of The Mason Tire & Rubber Co., Kent, O.

B. J. Weizman has resigned as advertising manager of the Standard Motor Truck Co.

George Pearson, Jr., has been appointed supervisor of the retail sales of the Maxwell Motor Co. He will handle trucks particularly.

George C. Talburtt, long associated with Millers Brothers' Automobile Co., has joined the Sangler & Berry organization as a special representative, by factory appointment, for Portage tires.

George Pearson, Jr., who was formerly connected with the Pacific coast branch of the Maxwell Motor Co., has been promoted supervisor of retail sales and will particularly handle truck sales.

J. B. Weidman has resigned as advertising manager of the Standard Motor Truck Co.

P. F. Minnock, who has been manager of the Ford factory branch at Columbus, Ohio, has been made manager of the Des Moines Ford factory branch, succeeding F. B. Norman. Norman has gone into business for himself and taken the Ford city agency at Wilmington, Del.

A. E. Beebe will open at Manhattan, Kan., a Willard battery service station. Mr. Beebe

George R. Oberman, for the past eight months manager of the San Antonio Motor Car Co., San Antonio, has resigned from that concern and has accepted the position of sales manager of the Clem Motor Car Co., which recently moved into its fine new home on Avenue C.

J. W. Applin, assistant to D. McCall White, chief engineer of the Cadillac Motor Car Co., has been promoted to chassis engineer, succeeding L. K. Snell, who recently resigned.

L. E. Gibson, representing the Hupp Motor Car Corp., will make a trip through South Africa and Spain, leaving this country this week.

Small Gets Big Area to Sell the Monroe

William Small Co. Will Be Sole Distributer in South—Indianapolis Home and Texas Branch

INDIANAPOLIS, Sept. 29—William Small, president of the William Small Co., has closed a contract with the Monroe Motor Co., Pontiac, whereby the Small company becomes the sole distributer of Monroe cars in the entire South. The territory to be controlled from Indianapolis includes Texas, Arizona, New Mexico, Oklahoma, Arkansas, Louisiana, Mississippi, Alabama, Georgia, Florida, North and South Carolina. In addition the Small company has contracted for the distribution of the Monroe products in Ohio, Illinois, and Kentucky, in addition to Indiana. The company has established a branch house in Fort Worth, Texas, under the management of L. C. Bradford.

BIG DEMAND FOR SPACE AT NATIONAL SHOWS

NEW YORK, Oct. 2—The Motor & Accessory Manufacturers, Inc., is meeting to-day at its offices in this city to allot space for its members at the New York and Chicago shows. "Members have applied for 50,000 feet of space at the New York and Chicago shows," said Manager L. M. Bradley, "which is considerably in excess of applications in preceding years. Interest seems to be increased rather than diminished and the war seems to be making no difference whatsoever. Present indications are that the coming shows will far surpass those of previous years."

Endurance Tire Men Meet

NEW BRUNSWICK, N. J., Sept. 20—Sales representatives of the Endurance Tire & Rubber Co. held a convention at the Hotel Klein in this city during the past week. Representatives of the company from all parts of the country were in attendance. The men were addressed by Judge Peter F. Daly, President W. G. H. Randolph, Vice-president C. E. Eckrode and other officials of the company.

Likes Index Digest

Editor Motor World: Congratulations on the index-digest arrangement in the last issue of Motor World. I think this is one of the finest features of the many which you have inaugurated in the past year or so.—E. V. Stratton Motors Co., Inc., E. V. Stratton, president, Albany.

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Decides Against Ford in Price-Fixing Case

Ohio Court Says Price May Be Cut and Declares Ford Contracts Used at the Time Were Invalid

CINCINNATI, OHIO, Sept. 25—The Ford Motor Co. was restrained from setting a price at which Ford cars are to be retailed when the United States Circuit Court of Appeals yesterday filed a mandate and opinion in the appeal of the Ford Motor Co. versus the Union Motor Sales Co. et al., Dayton, Ohio, in the United States District Court in which the court affirmed the decree of the United States District Court. Judge Hollister dismissed the Ford company's suit against the Union company in which Ford sought to restrain the Union company from selling Ford automobiles at prices below the standard fixed by the company.

This suit which was started in 1912 and which at that time attracted considerable attention involved a question of price cutting. The Union Motor Sales Co., a co-operative organization in which every customer becomes a stockholder by taking a $10 share of stock and shares in the benefits of the company, advertised Ford cars at less than regular prices.

Ford declined to sell this company cars and in the suit which was brought about in 1912 charged that the Union Motor Sales Co. had conspired to obtain cars from regular Ford dealers, which cars were sold at less than list; the suit asked $50,000 damages and an injunction restraining the Union company from selling any more Fords. A preliminary injunction was granted July 1, 1912.

A year later Ford charged L. A. Howard and O. D. Noble with contempt of court for continuing the forbidden practices; the charge was sustained in court, but in 1914, following numerous high court opinions on price maintenance, Judge Hollister dismissed the Ford suit in its entirety.

In the trial of the action it was proven that the Union company had secured Fords and sold them to stock members at from 10 per cent to 15 per cent less than list. The Ford contracts, however, were declared invalid by Judge Hollister in an opinion covering 14 typewritten pages and in which he declared that the licensed contracts used at that time were not of a form approved by the United States Supreme Court. In addition to the Union Motor Sales Co. the defendants include L. A. Howard, J. C. Horton, E. S. Sorsley and W. T. S. Yokum, all of Dayton, Ohio.

Dealer Takes on Tractors

INDIANAPOLIS, Sept. 29—The Fisher Automobile Co., headed by Carl G. Fisher, has become the distributing center for Indiana for the Cleveland Tractor Co., Cleveland, Ohio, of which Roland White is president.

Aviation Truck to Cost $2,040

WASHINGTON, Oct. 1—Motor trucks used by the signal corps for aviation work will be quite different from the standard army war trucks. There will be two sizes, the light truck specifications which follow being complete. This truck will have a Continental C-2 engine, with a Monarch governor, disk clutch Brown-Lipe and G. M. C. selective gearset, worm drive, semi-elliptic springs, wood wheels shod with pneumatic tires 35 x 5 in front and 28 x 7 rear. The price of the chassis is to be $2,040.72.

More Room for Flechter

NEW YORK, Oct. 1—L. V. Flechter & Co. have removed from 245 West Fifty-fifth Street, New York, to 192-200 Jackson Avenue, Long Island City.

Anderson in Buffalo

BUFFALO, Sept. 29—Forbes & Kerr, eastern distributers for the Anderson Motor Car Co., have just closed for Buffalo and vicinity with the Toppenberg Motor Car Co., formerly Overland distributer. Toppenberg will handle Anderson cars exclusively.

Merge to Make Forgings

BINGHAMTON, N. Y., Oct. 1—Crandal, Stone & Co. has been merged with the Cortland Carriage Goods Co. and the Cortland Forging Co., both of Cortland, into a new corporation under the style Brewer-Titchener Corp. The company will control five plants, making drop forgings, metal stampings, bow sockets, step hangers, etc. Directors for the first year will be: C. E. Titchener, B. M. Stannard, E. H. Brewer, E. A. Brewer, R. L. Brewer, F. L. Titchener, C. M. Devaney, M. C. Wood and R. P. Higgins.

Houk Slowly Recovering

NEW YORK, Oct. 1—George W. Houk is slowly recovering at Red Mountain Ranch, Faltbrook, Cal.

Colt Made Overland New York Manager

NEW YORK, Sept. 29—William L. Colt, president of the Colt-Stratton Co., Metropolitan distributer of Dodge Brothers cars, will on Nov. 1 become manager of the New York branch of the Willys-Overland Co.

Colt will retain his interest in the Colt-Stratton Co. but will relinquish active participation in its management.

The Colt-Stratton Co. was formed in 1909 to distribute the Cole car, Colt becoming president and H. L. Stratton vice-president. Immediately the Dodge Brothers car was placed on the market, the Colt-Stratton Co. became a distributer. Both cars have been handled continuously since then, but the Cole is to be dropped Oct. 1.

The Willys-Overland Co. moved into its new building at the corner of Broadway and Fiftieth Street about a year ago and controls branches in Newark, N. J., Brooklyn, Yonkers and the Bronx. W. D. Stewart has been acting as temporary manager and will return to the factory shortly after the inauguration of Colt.

40% Registration Gain for Wisconsin to Oct.

At End of September Over 160,000 Numbers Were Issued—Dealers Also Increasing

MILWAUKEE, Oct. 1—The state of Wisconsin is establishing a remarkable record this year for the number of licenses issued. At the end of September, more than 160,000 licenses had been issued. This is 10,000 in excess of the highest estimate made at the beginning of 1917 by registration officials in the office of the secretary of state at Madison. There is every reason to believe that before the demand for this year slackens, which will be shortly after December 1, that the total registration will stand at 165,000, which would mean a gain of approximately 45 per cent over 1916. Already a gain of 40 per cent has been shown over last year, when the total issue of licenses was 115,640. So far, 44,360 more licenses have been issued than a year ago. The gain of 1916 over 1915 was 35,849, and it was believed at the time that this record would hardly ever be approached under the most favorable circumstances. Yet it already has been bettered by 8500 and the lead may be increased to 13,500 before the end of 1917. The number of dealers registered in Wisconsin also shows a large increase. Thus far dealers' licenses have been issued to the number of 2153, compared with 1940 in 1916. This represents a gain of 213 dealers in spite of the fact that agency lines have been more strictly drawn everywhere.

Emerson Motors Reorganized

KINGSTON, N. Y., Sept. 29—The Emerson Motors Co. has been reorganized as the Campbell Motor Car Co. and will produce a new car which is to sell for $750. T. A. Campbell will be president and general manager of the company, other officers not yet having been elected. The capitalization of the new company will be slightly less than $2,750,000 and it is said that more than 70 per cent of the old stockholders have agreed to accept one-third share of stock in the new company for one share of the old. All of the promotion stock issued by the old company is to be called in and charged off. It is stated that present assets total about $600,000.

At present the company is operating its Kingston plant and turning out about 18 cars a week. There is about two-thirds of the parts on hand to build 250 cars, all parts being standard and bought in the open market. The same motor will be used and this will be built in Waltham, Mass., for the time being. Other component parts include a Salisbury axle and Muncie gearset. It is stated that the dealer organization built up by the Emerson company will be retained practically intact, the list including about 225 dealers.

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Ford Does $400,000,000 Business in Year

Annual Report Shows Increase of $26,754,560 in Total Assets—Work Begun on Rouge Foundry

DETROIT, Sept. 29—The Ford Motor Co., in its annual report for the fiscal year ended July 31, 1917, shows an increase of $26,754,560 in total assets and a reduction of $7,420,381 in the amount of cash on hand and in banks, as compared with the same period for 1916. The company also displays a large increase in the valuation of inventory of goods and merchandise.

Assets displayed in the report show:

Real estate used in company's business	$27,292,542.80
Real estate not used in company's business	None
Goods, chattels, merchandise and other tangible properties	66,921,158.13
Cash on hand, including deposits in banks	45,130,390.96
Patent rights, copyrights, trade marks and formulas	No value
Good-will	Nothing
Credits owing to the company	19,490,687.10
All other property	Nothing
Total	$158,834,778.99

Liabilities shown in the statement include:

Liabilities on real estate mortgage	Nothing
Liabilities on chattel mortgage	Nothing
Liabilities on all other secured indebtedness	Nothing
Liabilities on all unsecured indebtedness	$25,229,871.74
Total	$25,229,871.74

Total business transacted for the year is between $350,000,000 and $400,000,000 as compared with a gross business of $206,867,347 for the fiscal year ended July 31, 1916. The company produced 785,432 cars as against 533,921 cars for the preceding year. The schedule for 1918 calls for 900,000 cars and the company is now producing 2700 cars per day and anticipates a production of 3000 cars per day by Oct. 1. Workers numbering 37,000 are employed, as compared with 27,002 a year ago. The largest schedule day's output for the past fiscal year was 3310 cars. Production schedules for the past 13 years are as follows:

Year	Cars Made and Sold	Increase	Daily Average
1917	785,432	251,511	2,618
1916	539,921	255,708	1,816
1915	308,213	59 906	1 027
1914	248,307	83,855	827
1913	164.452	95.908	545
1912	68,544	30,078	228
1911	34,466	15,802	115
1910	18,664	8,057	62
1909	10,607	3,209	35
1908	6,398	†2,025	21
1907	8,423	6,284	28
1906	1,599	†96	5
1905	1.695	†13	5
1903-4	1,708	...	5

†Decrease.

The stupendous growth of the Ford Motor Co. is displayed by comparison of sales for 1917, amounting to more than $350,000,000, with the sales of 1903-4, which were less than $2,500,000.

The Ford company will undoubtedly have sales running far past the aggregate of the 1917 sales for 1918 because of the many branches of operation the company now follows. It is manufacturing hundreds of thousands of airplane cylinders for the government, ambulances and trucks for the government and Red Cross and trucks for private sales in addition to its tremendous schedule for passenger cars. The company has started work on its River Rouge foundry.

The past year has been an eventful one for the Ford company, with the Ford-Dodge suit probably constituting the most important single happening. This suit has not yet been settled, but it appears now as though the Ford company will not receive an adverse decision on its River Rouge activities, since the War Department has given its sanction to the enterprise. The blast furnaces at River Rouge, which will furnish all of the iron and steel for Ford cars, have been approved for construction by the Court, following the deposit of a $10,000,000 bond by Henry Ford, and excavation, as was recently announced in Motor World, has started, and the plant, which will cost $20,000,000, is now under way. Other recent activities of the Ford Motor Co. include: Completion of $500,000 worth of ambulances, beginning of production of Ford trucks, reception of a government contract for 40,000 of these trucks for war purposes.

The Ford company has also changed its dealer policies and in place of making the usual one-year contracts, as has always been done in the past, it is now making contracts with agencies which stipulate the yearly allotments, but which may be terminated at any time.

Closed Car Show for Des Moines

DES MOINES, Sept. 29—Des Moines motor car dealers will hold their first annual closed car show the week beginning Oct. 22. The show will be put on under the auspices of the Des Moines Automobile Dealers' Association and Dean Schooler and C. G. Van Vliet, who managed the annual winter show, will have charge. Every day in the week will be devoted to the exhibition of closed cars and each dealer will hold open house until 10 o'clock at night. Each dealer will handle his own decorating and entertainment features, but the general scheme for the show will be worked out by the managers.

Ban Washington Used Car Show

WASHINGTON, Sept. 29—For a most unusual reason—the great demand for used cars in Washington and vicinity—the Automobile Trade Association of Washington has voted down the proposition to hold a used car show here early in October. Dealers report they are unable to keep a sufficiently large supply of used cars at one time to enable them to hold a show.

Dealer Co-operation Is Key to Success

Cleveland Association Meets Every Month and Discusses Problems —New Car Sales Good

CLEVELAND, Sept. 29—The one big thing that makes the dealer business in Cleveland better than the average is co-operation. First, the dealers co-operate to bring about good merchandising conditions. Then they co-operate with the automobile club, and this in turn, co-operates with the Chamber of Commerce, police, and all public spirited organizations. And the results are good roads, good legislation, and conditions that tend to place a premium on owning a motor car.

The dealers' association is practically an automobile show company, comprising 43 dealer members, each owning a share of stock that costs $300. This association meets monthly, and discusses all problems of the trade. It is unusually close to the automobile club, as the secretary of the club is manager of the dealer organization, and the rooms of the two organizations are practically identical.

The main difficulty that the dealers are facing here is to obtain storage space for new and used cars during the winter months. At present they are contemplating taking a 99-year lease on property and erecting a large warehouse, similar to the one used in Minneapolis. This building will have two or three stories, and will house new cars in winter and used cars in summer.

Labor conditions are not so bad here as in many other cities. Nearly all of the dealers charge $1 per hour for labor, and do work only on a cash basis. This has been found the only satisfactory method, and though not all of the dealers are making money even now, service conditions are good.

The dealers state that there is no problem in used cars, in most cases. Experience has taught them to be cautious in used car trades, and the monthly meetings of the dealers have created confidence, and prevented the wild taking in of used cars simply to make a sale. Besides, new car sales have been good, and it has been estimated that 50,000 cars will be running in the territory the end of the season—an increase of 10,000 cars.

Cleveland dealers never had much difficulty in securing cars, and conditions in this respect are now better than they were a short time ago. Not only are many cars built in the city, but both Detroit and Toledo are near at hand. Steamboats relieve any possible freight car shortage, and drive-aways are easily possible.

Because of the congestion in the business center, and because of the high rents, there seems to be a tendency for the motor row to move from Euclid Avenue to Prospect. From 40th to 50th, the

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street is wide, and there are no street cars, and this will possibly be the motor row in a few years.

Many new dealer buildings are evident. Pierce-Arrow has erected a building at Carnegie and 46th Street, Packard has put up a million dollar establishment near 55th Street, and the Cadillac, Hudson and Studebaker each have new homes on Euclid. Chalmers is now in temporary quarters pending moving into a new building, and Kelly-Springfield is erecting a large building near 46th Street.

One example of the co-operation of all of the live organizations in the city was the passing of a $3,000,000 bond issue for paving the city streets. Another was the passage of a car theft amendment that made the sentence for car theft to a possible imprisonment of from 1 to 15 years. This was incorporated in the horse theft law. The associations likewise co-operate with the police on recovering stolen cars.

HEARNE IN DUESENBERG WINS AT TRENTON

TRENTON, N. J., Sept. 29—Eddie Hearne in a Duesenberg to-day won the main race at the Trenton Fair, a 10-mile event, on the ½-mile dirt track. His time was 13:03 3-5. Walter Haines in a Mercer was second and Gaston Chevrolet in a Frontenac was third.

Gaston Chevrolet was cheered when he continued in the last race after his Frontenac had caught fire twice. This event was on the program for 25 miles, but the distance was reduced on account of darkness. Vail ran through the fence in the 10-mile race, but was uninjured.

The summary:

5 Miles, Class E, Non-Stock

Car	Driver	Time
Chevrolet	J. C. Jessop	6:39
Ford Special	A. Duryea	....
Gifford Special	E. C. Gifford	....

5 Miles, Class E, Non-Stock, Special Match Event for Winners of Events Nos. 1, 2 and 3

Car	Driver	Time
Hudson	Vail	6:25⅕
Duesenberg	Hearne	....
Stutz	Dickinson	....

10 Miles, Class D, Free-for-All Final

Car	Driver	Time
Duesenberg	Hearne	13:03⅗
Mercer	Haines	....
Frontenac	G. Chevrolet	....

5 Miles, Class E, for Non-Prize Winners

Car	Driver	Time
Peugeot	Burt	7:02⅘
KlineKar	French	....
Gifford Special	Gifford	....

Canadian Liberty Co.

DETROIT, Sept. 29—The Liberty Motor Co., of Canada, Ltd., Windsor, Ont., has been incorporated by Percy Owen, president of the Liberty Motor Car Co., here, James F. Bourquin and Harland M. Wirth, with a capital of $10,000. The new incorporation was made to protect the name of the company in Canada and to insure facilities if the company desires Canadian business in the future.

Coast Trade Meeting Draws 400 Delegates

Every Craft Represented at Convention of California Automobile Trades Association

SAN FRANCISCO, Sept. 29—This city was the convention seat of the Second Annual Convention of the California Automobile Trades Association, which organization is composed of all the crafts identified with the motor car industry in this state, including the automobile agents, accessory dealers and garagemen. Between 400 and 500 delegates representing every part of the state attended the conclave and the session was easily the most spirited gathering of automobile men that has ever been held in the West.

At the executive session during the day every phase of the business was discussed from the points of improving service and at the same time protecting the dealers, garage and repair men. A spirited fight developed regarding price maintenance. It developed that in several localities large corporations and owners of five cars or more were receiving a trade discount from certain jobbers in accessory and tire lines, which in many instances brought their consumption rate below the price the dealers could secure the stock for re-sale, naturally eliminating these dealers from competing for the trade.

The delegates went on record as opposing these methods and appointed a committee to wait on the large tire and accessory jobbing concerns in an effort to have these firms discontinue price cutting.

Another plan was suggested to bring all garagemen in the state into the association; fix certain rates for repairs which shall be posted in all the garages in order that tourists may know the cost of repairs wherever the locality. Association garages are to have signs hanging conspicuously from their buildings informing the public they are members of the association and set prices prevail.

At the banquet W. B. Kollmyer, an attorney, discussed organization and went into details of the Sherman law and the Cartwright act, which is the state anti-trust law. He informed the delegates that their organization, provided that it adhered to its present by-laws, could in no way be looked upon as an association that was formed to restrain trade and as such could not be looked upon as violating the national and state anti-trust laws.

A. J. Marsh, president of the Motor Car Dealers' Association, and Chester N. Weaver, executive committee of the same body, and Percy L. Towne, president of the California State Automobile Association, were also among the speakers, and they all urged that the organization proceed along its present lines and that it would not be long in becoming one of the factors in the coast industry. They pointed out what their associations had done through organization, and sent their hearers away more ardent boosters for the state association.

The San Francisco Trade Association, the local unit of the State organization, acted as host during the convention.

Pathfinder Motor Co. Bankrupt

INDIANAPOLIS, Sept. 29—Too little capital has resulted in the appointment of a receiver for the Pathfinder Motor Co. of America. Operating on a capital of only $200,000, the company has been forced to borrow nearly $150,000, payment for which and claims from three creditors, exceeding $10,000, have brought on the receivership. Charles Martindale, a local attorney, has become receiver. The company has been operating for about 11 years and made a high-priced car selling at $3,250. There are about 5000 of these cars in use now. The bankruptcy petition alleges that the company is insolvent and that its liabilities exceed $100,000. The company is charged with showing a preference for certain creditors during the last 4 months. Last August this company succeeded the Pathfinder Motor Co. C. G. McCutcheon is president; F. C. Dorn, vice-president, and P. N. White, secretary and treasurer.

Scrap Metal Prices

NEW YORK, Sept. 28—Following are prices paid by New York dealers for scrap metal during the past week. They are from *Iron Age:*

	Cents Per lb.
Copper, heavy and crucible	24.00 to 24.25
Copper, heavy and wire	23.25
Copper, light and bottoms	20.50
Brass, heavy	15.50 to 15.75
Brass, light	11.50 to 12.00
Heavy machine composition	22.00 to 22.50
No. 1 yellow brass turnings	16.25
No. 1 red brass or composition turnings	19.00
Lead, heavy	7.00
Lead, tea	6.75
Zinc	6.00

Seattle Closes on Sunday

SEATTLE, Sept. 29—Members of the Motor Car Dealers' Association of Seattle hereafter will close their respective establishments, both sales and service departments, promptly each week day at 6 p. m. and all day Sundays and holidays. They have requested that all motor car and truck users co-operate with them in the movement to create better working conditions for their employees.

Atwater Kent Reduces Parts

PHILADELPHIA, Sept. 29—The Atwater Kent Mfg. Works has reduced by 50 per cent the price of contact springs and screws used in its types H, K2 and K3 ignition apparatus. All trade discounts remain as before. The change will not go into effect until Nov. 1 in so far as dealers and the general public are concerned. The reduction is made in the face of rising costs of materials and as a means to insure that purchasers get genuine parts instead of bogus parts which are inaccurate and of inferior quality.

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Specifications of the Leading Cars

MOTOR WORLD GUIDE

Revisions Are Made in Table Every Week

Model	Motor	S. A. E.	Ignition	Carbureter	Starter	Clutch	Gearset	Wheelbase	Tires	Rims	2-Passenger	5-Passenger	7-Passenger	Coupe	Sedan	Limousine	Detachable Top
ABBOTT																	
6-44	6-3½x4½	25.3	Remy	Stmbg	Remy	DP	3	122	32x4	SS	1295	†1295	1295	....	1920	....	....
6-60	6-3½x5½	29.4	Remy	Stmbg	Remy	DD	3	122	34x4	SS	1595	....	1595	2150	2150	....	....
ALLEN																	
Classic	4-3½x5	22.5	Wsths	Stmbg	Wsths	C	3	112	32x3½	SS	†895	895	....	1175	1195	....	....
AMERICAN-SIX																	
A	6-3½x5	21.6	G & D	Zenith	G & D	D	3	122	32x4	SS	....	1375	....	....	....	....	....
ANDERSON																	
Six-40	6-3½x4½	25.4	Conn	Zenith	Wsths	DP	3	120	33x4	SS	....	1395	....	....	2100	....	....
APPERSON																	
6-17	6-3½x5	29.4	Remy	Rafld	Bijur	DP	3	130	34x4	SS	†1990	1930	1990	....	....	....	....
8-17	8-3½x5	33.8	Remy	Johnson	Bijur	DP	3	130	35x4½	SS	†2250	....	2250	....	....	....	....
AUBURN																	
6-39	6-3½x5	23.4	Remy	Rafld	Remy	DP	3	120	34x4	SS	1195	1195	*1220	....	....	....	1380
6-44	6-3½x5½	29.4	Delco	Rafld	Delco	DP	3	131	35x4½	SS	....	†1635	1635	....	....	....	1935
AUSTIN																	
Hy-King	12-2½x5	39.6	Delco	Stmbg	Delco	D	6	142½	34x4½	QD	3750	3750	4000	4550	4950	5250	....
BIDDLE																	
D	4-3½x5½	22.5	Dixie	Zenith	G & D	DP	4	122	32x4	QD	2200	2350	†2275	....	....	3800	3900
BOUR-DAVIS																	
17	6-3½x4½	25.3	Remy	Stmbg	G & D	DP	3	118	32x4	QD	....	1385	....	....	....	....	....
BREWSTER																	
	4-4 x5½	25.6	Bosch	Zenith	U.S.L.	C	3	125	34x4½	SS	†6500	....	....	....	7500	7700	....
BRISCOE																	
B4-24	4-3⅞x5½	16.3	Conn	Buick	A-Lite	C	3	104	30x3½	C	725	725	....	....	....	....	850
BUICK																	
D 4-34-35	4-3½x3½	18.2	Delco	Marvel	Delco	DD	3	106	31x4	C	795	795	....	....	....	....	....
D-44-47	6-3½x4½	27.3	Delco	Marvel	Delco	DD	3	118	34x4	SS	1265	1265	....	‡1695	1795	....	....
E-49	6-3½x4½	27.3	Delco	Marvel	Delco	DD	3	124	34x4½	SS	....	....	1495	....	2175	....	....
CADILLAC																	
57	8-3½x5½	31.2	Delco	Own	Delco	D	3	{132 {125	35x5 34x4½	SS	2590	2590	2590	....	3535	4085	....
CASE																	
T17	4-3½x6	21.0	Conn	Rafld	A-Lite	C	3	120	34x4	SS	†1190	....	1190	....	....	....	....
U	6-3½x5½	28.4	Wsths	Rafld	Wsths	P	3	125	35x4½	....	....	....	1875	....	....	....	....
CHALMERS																	
6-30	6-3½x4½	25.4	Remy	Stmbg	Wsths	DP	3	{117 {122	32x4 34x4	SS	1250	1250	1350	1625	1550	2925	....
CHANDLER																	
17	6-3½x5	29.4	Bosch	Rafld	G & D	D	3	123	34x4	SS	1595	....	1595	2195	2295	2895	....
CHEVROLET																	
490	4-3½x4	21.7	Conn	Zenith	A-Lite	C	3	102	30x3½	C	635	635	....	....	1060	....	....
FA-5	4-3½x5½	21.7	Remy	Zenith	A-Lite	C	3	108	33x4	SS	935	935	....	....	1475	....	....
FA-2																	
D	8-3½x4	36.45	Remy	Zenith	A-Lite	C	3	120	34x4	SS	1385	1385	†1385	....		....	....
COLE															{2495		
860	8-3½x4½	39.2	Delco	Stmbg	Delco	C	3	127	35x4½	SS	†1995	....	1995	2495	{2695	....	....
COLUMBIA																	
	6-3½x4½	25.3		Stmbg	W.Lnrd	DP	3	115	32x4	....	....	....	1295	....	....	....	....
COMMONWEALTH																	
Ultra 4-40	4-3½x5	19.6	A.Kent	Carter	Dyneto	DD	3	110	32x3½	C	†975	965	....	....	....	....	....
CROW-ELKHART																	
CE-33-35	4-3½x5	19.6	Conn	Carter	Dyneto	D	3	114½	32x3½ 31x4	SS	†995	995 935	....	....	1195	1275	....
DANIELS																	
B	8-3½x5	33.8	Wsths	Zenith	Wsths	D	3	127	34x4½	QDR	†3100	3100	3100	....	....	....	....
DARLING																	
130	6-3½x5½	2.4	A.Kent	Stmbg	Bijur	DD	3	130	33x4½	SS	2250	2250	2250	....	....	....	....
DAVIS																	
H & I	6-3½x4½	25.3	Delco	Stmbg	Delco	C	3	119	34x4	....	1295	1295	1295	1695	1795	....	1995
J	6-3½x5½	29.4	Delco	Stmbg	Delco	C	3	124	34x4½	....	....	1595	1595	....	....	....	....
DETROITER																	
6-45	6-3½x4½	25.3	Conn	Ball	A-Lite	D		119	33x4	SS	‡1395	1395	†1425	....	1875	....	....
DISPATCH	4-3½x5	22.5	Bosch	Rafld	U.S.L.	G	4	120	36x3½	QD	1135	....	1210	1400	....	....	....
DIXIE FLYER																	
LS35	4-3½x5	16.9	Conn	Carter	Dyneto	D	3	112	32x3½	SS	†895	895	....	....	1295	....	....
DOBLE	2-5x4	....	Own Dobl	Stmb	Wagner			135	35x5	....	....	....	2500	....	....	....	....
DODGE BROTHERS																	
	4-3½x4½	24	Delco	Stewart	N.E.	D	3	114	32x3½	SS	835	835	....	1265	1265	....	1000

Model	Motor	S. A. E.	Ignition	Carbureter	Starter	Clutch	Gearset	Wheelbase	Tires	Rims	2-Passenger	5-Passenger	7-Passenger	Coupe	Sedan	Limousine	Detachable Top
MADISON																	
4	.....	....	.....	.....	.....	..	.	120	34x4	..	.....	....	....	....	....	....	....
	6-3½x5	23.4	Remy	Rafld	Remy	DD	3	115	34x4	SS	†1285	1285	1375	....	....	....	....
MAIBOHM																	
A	4-3½x4	15.6	A.Kent	Zenith	Disco	DD	3	105	30x3½	C	795	....	....	....	....	....	....
MARION HANDLEY																	
6-40	6-3½x5	23.4	Wsths	Stmbg	Wsths	DD	3	120	32x4	SS	†1350	....	1350	....	....	....	....
6-60	6-3½x5½	29.4	Wsths	Stmbg	Wsths	DD	3	125	35x4½	SS	†1650	....	1650	....	2350	....	....
MARMON																	
34	6-3½x5½	33.7	Bosch	Stmbg	Bijur	C	3	136	32x4½	QD	....	3550	....	....	....	....	....
MAXWELL																	
25	4-3½x4½	21	A.Kent	K D	Simms	C	3	109	30x3½	C	‡745	745	....	1095	1095	1095	855
McFARLAN																	
	6-4½x6	48.6	Mag'to	Stmbg	Wsths	DP	3	136	35x5	QD	3500	3500	3500	....	4600	4650	....
MERCER																	
22-73	4-3½x6½	22.5	Bosch	Zenith	U.S.L.	DD	4	132	34x4½	QD	†3500	*3500	....	....	....	....	....
22-73	4-3½x6½	22.5	Bosch	Zenith	U.S.L.	DD	4	115	32x4	QD	3400	Raceabout	3250.	..	....	....	....
METZ																	
25	4-3½x4	24	A.Kent	A.W.T.	Wsths	F	.	108	32x3½	C	650	650	....	....	....	....	....
MITCHELL																	
D-40	6-3½x5	25.4	Conn	Rafld	Splitdf	C	3	120	32x4	SS	1250	1250	....	....	....	....	300x
C-42	6-3½x5	29.4	Conn	Rafld	Wsths	C	3	127	34x4	SS	‡1490	1510	1525	2060	2240	2850	300x
MOLINE-KNIGHT																	
C	4-3½x5	22.5	Conn	Schebler	A-Lite	C	3	118	34x4	SS	†1495	1495	....	....	....	....	....
G	4-4 x6	25.6	Conn	Schebler	A-Lite	C	3	122	35x4½	SS	†1840	....	1840	2490	2440	....	....
MONITOR																	
C-R	4-3½x4½	22.5	Heinse	Schebler	Heinse	D	3	110	32x3½	SS	995	995	....	....	....	....	....
N-O	6-3½x4½	25.4	Heinse	Stmbg	Heinse	D	3	117	33x4	SS	1195	1195	....	....	....	....	....
MONROE																	
M-3	4-3 x4½	14.4	Conn	Zenith	A-Lite	DD	3	96	30x3	QD	565		....	....	965	....	....
M-4	4-3½x4½	16.9	Conn	Zenith	A-Lite	DD	3	115	32x4	QD	....	1095	....	....	....	....	....
MOON																	
	6-3x4½	19.8	Delco	Titan	Wagner	DP	3	114	32x3½	..	.....	1095	....	....	....	....	....
6-45	6-3½x4½	25.3	Delco	Rafld	Delco	DD	3	118	34x4	SS	‡1575	....	1575	....	....	....	....
6-66	6-3½x5½	29.4	Delco	Rafld	Delco	DD	3	125	35x4½	SS	†1850	....	1850	2450	2450	....	....
MURRAY																	
70-T	8-3½x5	33.8	Dixie	Zenith	Wsths	DP	3	128	34x4½	..	2800	....	2800	....	....	Chassis	2300
NASH																	
671	6-3½x4½	29.4	Delco	Rafld	Bijur	DP	3	125	34x4	SS	1435	....	1465	....	1630	....	1690
681-684	6-3½x5	25.4	Delco	Marvel	Delco	P	3	121	34x4	SS	....	1295	....	....	1985	....	....
NATIONAL																	
Six	6-3½x5½	29.4	Dixie	Rafld	Wsths	C	3	128	34x4½	QDR	†1995	†1995	1995	2645	2820	....	....
Twelve	12-2½x4½	39.7	Delco	Rafld	Bijur	C	3	128	34x4½	QDR	†2595	†2595	2595	3245	3420	....	....
NELSON																	
	4-3½x4½	15.6	Bosch	Zenith	U.S.L.	D	3	104	32x4	SS	1200	†1400	....	....	1800	....	....
OAKLAND																	
34	6-2½x4½	19.0	Delco	Marvel	Delco	C	3	112	32x4	SS	‡945	945	....	....	....	....	....
50	8-3½x4½	39.2	Delco	Stmbg	Delco	C	3	127	34x4½	SS	....	....	1695	....	....	....	....
OLDSMOBILE																	
45	8-2½x4½	26.4	Delco	Johnson	Delco	C	3	120	34x4	SS	....	....	1467	....	....	....	....
37	6-2½x4½	18.9	Delco	Johnson	Delco	C	3	112	32x4	SS	†1185	1185	....	1595	1695	....	....
OLYMPIAN																	
	4-3½x4½	37		Conn	Carter	A-Lite	D	3	114	32x3½	....	†965	965	....	....	....	....	....
OVERLAND																	
85B4	4-4½x4½	27.2	Conn	Titan	A-Lite	C	3	112	32x4	SS	‡880	895	....	....	....	....	....
90	4-3½x5	18.2	Conn	Titan	A-Lite	C	3	{104 {106	31x4	C	735	750	†795	....	....	....	....
OWEN-MAGNETIC																	
M-25	6-3½x5½	29.4	Bosch	Zenith	O-M	OM	6	125	34x4½	SS	....	3300	....	3650	....	4350	....
O-36	6-3½x5½	33.6	Bosch	Zenith	O-M	OM	6	136	35x5	SS	‡3950	†3950	3950	....	....	5000	....
PACKARD																	
3-35								{136				....	4100			5650	
3-25	12-3 x5	43.2	Delco	Own	Bijur	DD	3	{128	35x5	QD	....	3700	3700	5050	....	5250	....
PAIGE																	
6-39	6-3½x5	23.4	Remy	Stmbg	G & D	D	3	117	32x4	SS	1330	1330	....	....	1925	....	....
6-46	6-3½x5½	29.4	Remy	Rafld	G & D	D	3	124	35x4½	SS	....	....	1450	....	....	....	....
6-51	6-3½x5½	29.4	Remy	Rafld	Remy	D	3	127	35x4½	SS	†1895	....	1695	....	....	....	....
6-55	6-3½x5½	29.4	Remy	Rafld	Remy	D	3	127	35x4½	SS	....	....	1775	2850	....	3230	....

*6-passenger. †4-passenger. ‡3-passenger.

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DORRIS																		
I-C-6	6-4 x5	33.4	Bosch	Stmbg	Wsths	D	3	130	36x4½	SS	....	....	2785	3325	3350	4150	....
DORT																		
9	4-3½x5	16.9	Conn	Carter	Wsths	C	3	105	30x3½	QD	‡725	725	....	....	1095	....	845
ELCAR																		
D.F.	4-3½x5	19.6	Delco	Carter	Dyneto	DP	3	115	32x3½	SS	845	845	†845	....	....	....	....
ELGIN																		
	6-3 x4½	21.6	Remy	Stmbg	Wagner	DP	3	116	33x4	..	†1095	1095	....	1645	....	....	....
EMPIRE																		
50-51	4-3½x5	24.0	Conn	Stmbg	A-Lite	DP	3	115	33x4	SS	1165	1125	....	....	....	....	....
70-A	6-3½x4½	25.6	Conn	Stmbg	A-Lite	DP	3	120	34x4	SS	†1345	1345	1385	....	1625	....	....
FIAT																		
55	4-5½x6½	42	Bosch	Zenith	Wsths	D	4	140	35x5	QD	....	....	5500	....	....	6500	....
FORD																		
T	4-3½x4	22.5	Own	{Holly Kngstn	....	D	2	100	30x3½-rC		345	360	....	505	645	....	....
FRANKLIN																		
9	6-3½x4	25.3	A.Kent	Own	Dyneto	D	3	115	{32x4 33x4½	SS	2000	2050	....	2850	2950	3200	....
GLIDE																		
6-40	6-3½x5	23.4	Wsths	Rafid	Wsths	D	3	119	34x4	SS	....	1395	....	....	1595	....	....
GRANT																		
K	6-3 x4½	21.6	Remy	Stmbg	Wagner	C	3	112	32x3½	..	‡875	875	....	....	....	....	....
HAL TWELVE																		
	12-2½x5	39.7	....	Stmbg	Wsths	DP	3	135	34x4½	SS	2600	†2600	2600	....	3500	4500	....
HALLADAY																		
S	6-3 x5	21.6	A-Lite	Stmbg	Wsths	D	3	118	33x4	SS	‡1185	1150	....	....	....	....	....
R	6-3½x5	23.4	Wsths	Stmbg	Wsths	D	3	122	34x4	SS	1385	1385	....	....	....	....	....
HARROUN	4-3½x5½	16.9	A.Kent	Stmbg	Remy	C	3	106	30x3½	..	....	785	....	....	....	....	....
HAYNES																		
36	6-3½x5	29.4	Remy	Rafid	L-N	DP	3	121	34x4	SS	....	1595	....	....	2260	....	....
37	6-3½x5	29.4	Remy	Rafid	L-N	DP	3	127	35x4½	SS	†1735	....	1725	....	2390	....	....
40	12-2½x5	36.3	Delco	Rafid	L-N	DP	3	121	34x4½	SS	....	2095	....	....	2760	....	....
41	12-2½x5	36.3	Delco	Rafid	L-N	DP	3	127	34x4½	SS	†2225	....	2225	....	2890	....	....
HOLLIER																		
186	6-3 x4½	21.6	Remy	Stewart	Aplco	C	3	116	32x3½	SS	....	1085	....	....	....	....	....
178	8-3 x4½	28.8	A.Kent	Stewart	Aplco	C	3	116	34x4	SS	†1285	1285	....	....	....	....	....
HUDSON																		
Super-6	6-3½x5	29.4	Delco	Own	Delco	D	3	125½	35x4½	SS	1650	†1750	1650	1950	2175	2925	....
HUPMOBILE																		
	4-3½x5½	22.5	A.Kent	Zenith	Wsths	D	3	119	34x4	SS	1385	1385	....	....	1735	....	....
NU	4-3½x5½	22.5	A.Kent	Zenith	Wsths	D	3	134	35x4½	SS	....	....	1540	....	....	....	....
INTER-STATE																		
T	4-3½x5	19.6	Remy	Schebler	Remy	C	3	110	33x4	SS	875	925	†950	....	1325	....	....
JACKSON																		
349	8-3 x3½	28.8	A-Lite	Zenith	A-Lite	DP	3	118	34x4	SS	†1495	1495	1495	....	2195	....	1705
350	8-3 x3½	28.8	A-Lite	Zenith	A-Lite	DP	3	112	33x4	SS	....	1195	....	....	....	....	....
JONES	6-3½x5½	29.4	Remy	Stmbg	Remy	DP	3	125	34x4	..	....	1675	1675	....	2550	....	....
JORDAN																		
Sixty	6-3½x5½	29.4	Bosch	Stmbg	Bijur	DD	3	127	35x4½	SS	1995	†1995	1995	....	2650	3300	....
KING																		
E	8-3 x5	28.8	A.Kent	Ball	Bijur	DP	3	120	34x4	SS	‡1585	†1700	1650	....	2300	....	....
KISSEL																		
100-pt.	6-3½x5	25.3	Remy	Stmbg	Own	C	3	117	34x4	SS	†1295	1295	1385	1735	1735	....	1735
Double-6	12-2½x5	39.7	Delco	Stmbg	Own	DD	3	...	34x4½	..	1385	....	2250	....	2650	....	2650
KLINE																		
6-38-G	6-3½x4½	25.3	Wsths	Rafid	Wsths	DP	3	120	34x4	SS	1275	1295	†1295	....	....	....	....
LEXINGTON																		
6-O	6-3½x4½	25.3	Conn	Rafid	Wsths	DD	3	116	32x4	QD	1345	1345	....	1450	1450	....	....
6-R	6-3½x4½	25.4	Conn	Rafid	Wsths	P	3	122	34x4	QD	....	....	1585	....	....	....	....
LIBERTY																		
6	6-3½x4½	25.4	Delco	Stmbg	Delco	DP	3	115	32x4	SS	1350	1350	....	....	....	....	....
LOCOMOBILE																		
38 Series II	6-4½x5	43.3	Berling	Ball	Wsths	DD	4	139	37x5	QD	†5150	*5000	5000	....	....	6200	....
48 Series II	6-4½x5½	48.6	Berling	Ball	Wsths	DD	4	142	37x5	QD	†6050	*5950	5950	....	....	7200	....
LOZIER																		
84	4-4½x6½	28.9	Bosch	Stewart	G & D	D	4	120	36x4½	SS	....	....	1695	....	....	....	....
82	6-3½x6	36.0	Eisnn	Rafid	G & D	D	3	132	36x4½	SS	....	....	2775	....	....	....	....
LUVERNE																		
17	6-3½x5	33.7	Bosch	Schebler	Bosch	DD	.	132	35x4½	SS	....	....	1650	....	....	....	....

PAN-AMERICAN																		
	6-3½x5	23.4	G & D	Rafid	G & D	D	3	120	32x4	SS	....	1500	....	....	....	....	....
PATERSON																		
6-45	6-3½x4½	25.4	Delco	Stmbg	Delco	C	3	117	32x4	C	†1295	1265	1295	....	....	....	....
PATHFINDER																		
3-A, B, C	12-2½x5	39.7	Delco	Stmbg	Delco	DD	3	135	35x5	SS	3250	3250	3250	....	....	....	....
PEERLESS																		
56-2	8-3½x5	33.8	A.Kent	Special	A-Lite	DD	3	125	35x4½	SS	†2340	....	2340	2850	2900	3600	....
PIERCE-ARROW																		
38-C-4	6-4 x5½	38.4	Bosch	Own	Wsths	C	4	134	36x4½	QD	4800	4800	†4800	5900	....	....	....
48-B-4	6-4½x5½	48.6	Bosch	Own	Wsths	C	4	142	37x5	QD	5400	5400	5500	6800	....	....	....
66-A-4	6-5 x7	60	Bosch	Own	Wsths	C	4	147½	38x5½	QD	†6400	6400	6500	7800	....	....	....
PILOT																		
6-45	6-3½x5	23.4	Delco	Tltn	Delco	DP	3	119	32x4	SS	†1295	1295	....	....	....	....	....
PREMIER																		
6-B	6-3½x5½	27.3	Delco	Johnson	Delco	DP	3	125½	35x4½	SS	2285	....	2285	....	....	....	....
PRINCESS																		
4-36	4-3½x4½	22.5	Splitdf	Schebler	Disco	D	3	108	32x3½	....	825	825	‡825	....	....	....	....
REGAL																		
J	4-3½x4½	19.6	A.Kent	Carter	A-Lite	C	3	108	30x3½	QD	....	795	....	....	....	....	....
REO																		
M	6-3½x5½	30.4	Remy	Rafid	Remy	DD	3	126	34x4½	SS	....	†1385	1385	....	1960	....	....
R	4-4½x4½	27.2	Remy	Johnson	Remy	DD	3	115	34x4	SS	‡985	985	....	....	....	....	....
ROAMER																		
R.A.	6-3½x5	23.4	Bosch	Stmbg	Bijur	DP	3	127	34x4	SS	2150	1850	....	....	....	....	....
ROSS																		
E	6-3½x5½	29.5	....	....	W.Lnrd.	DD	3	130	35x4½	SS	‡1750	....	1750	....	....	....	....
	8-3½x5	33.8	....	....	W.Lnrd	DD	3	130	35x4½	SS	‡1850	....	1850	....	....	....	....
SAXON																		
B-5-R	4-2½x4	12.1	A.Kent	Schebler	Wagner	DD	3	96	30x3	DC	395	....	....	....	....	....	....
S-4	6-2½x4½	19.8	Remy	Stmbg	Wagner	DD	3	112	32x3½	SS	935	935	....	....	....	....	....
SAYERS	6-3½x4½	25.3	Delco	....	Delco	P	3	...	32x4	..	....	1295	....	....	....	....	....
SCRIPPS-BOOTH																		
D	8-2½x3½	22.0	Remy	Zenith	Wagner	DD	3	120	32x4	SS	†1425	....	....	....	....	....	....
G	4-3½x4	21.7	Remy	Zenith	Remy	C	3	110	30x3½	C	1250	....	....	....	....	....	....
SIMPLEX																		
5	6-4½x6½	45.9	Eisnn	Nwcmb	Bosch	D	4	143½	37x5r	QD	Chassis	7000	....	....	....	....	....
SINGER																		
17	6-4 x5½	38.4	Bosch	Rafid	Wsths	DD	4	138	35x5	QD	3800	†3800	3800	....	....	4750	....
STANDARD																		
8	8-3½x5	33.8	Splitdf	Zenith	Aplco	D	3	127	35x4½	....	†1950	....	2000	....	2500	3500	....
STANLEY																		
Steamer	2-4 x5	....	....	....	....	..	.	130	35x4½	SS	‡2200	2200	2300	....	....	....	....
STEARNS																		
SKL4	4-3½x5½	22.5	Remy	Schebler	Wsths	DD	3	119	34x4	SS	†1785	1785	1925	2300	2385	3200	....
SK8	8-3½x5	33.8	Remy	Rafid	Wsths	DD	3	125	35x4½	SS	‡2575	....	2575	3200	....	3875	....
STEPHENS																		
Salient Six	6-3½x4½	25.3	Delco	Stmbg	Delco	P	3	117½	32x4	..	‡1385	1385	....	....	....	....	....
STUDEBAKER																		
SF-4-40	4-3½x5	24.2	Remy	Schebler	Wagner	C	3	112	34x4	SS	‡1050	....	1050	....	....	....	....
ED-6-50	6-3½x5	36.4	Remy	Schebler	Wagner	C	3	122	35x4½	SS	‡1385	....	1385	1850	1850	2750	....
STUTZ																		
R	4-4½x6	30.6	Bosch	Stmbg	Remy	C	3	130	32x4½	SS	2550	†2650	*2750	....	....	....	....
S.Bearcat	4-4½x6	30.6	Bosch	Stmbg	Remy	C	3	120	32x4½	SS	2550	....	....	....	....	....	....
SUN																		
17	6-3½x5	23.4	Remy	Rafid	Remy	DP	3	116	34x4	SS	†1345	1345	1345	....	....	....	....
VELIE																		
28	6-3½x4½	25.3	Remy	Stmbg	Remy	DP	3	115	32x4	SS	1165	1185	†1185	1800	1735	....	1385
27	6-3½x5½	29.4	Remy	Stmbg	Remy	DP	4	124	35x4½	SS	....	....	1650	....	....	....	....
WESTCOTT																		
S-17	6-3½x5½	29.4	Delco	Rafid	Delco	DD	3	125	35x4½	SS	†1790	1790	1790	....	2390	....	....
WHITE																		
16-Valve	4-4½x5½	28.9	Bosch	Own	L.N.	P	4	{124½ 137½	33x4½ 37x5	QD	†4600	....	4600	5650	5650	5800	....
WILLYS-KNIGHT																		
88-4	4-4½x4½	27.2	Conn	Tltn	A-Lite	C	3	121	34x4½	SS	....	....	1450	....	....	....	....
88-6	6-3½x4	36.4	Remy	Zenith	A-Lite	C	3	125	34x4½	SS	....	....	1950	....	2650	2750	....
WILLYS																		
89-6	6-3½x5½	29.4	Conn	Tltn	A-Lite	C	3	120	33x4½	SS	†1295	.....	1295	....	1975	....	....
WINTON																		
33	6-3½x5½	33.7	Bosch	Rafid	Bijur	DD	4	128	36x4½	QD	2950	2950	3000	3865	4165	4165	....
48	6-4½x5½	48.6	Bosch	Rafid	Bijur	DD	4	138	37x5	QD	3500	3500	3500	4500	4750	4750	....

*6-passenger. †4-passenger. ‡3-passenger.

ABBREVIATIONS—"A-C" Allis-Chalmers, "L-N" Leece-Neville, "Tltn" Tillottson, "Atzr" Atomizer, "Rech" Reichenbach, "DD" Dry Disk, "DP" Dry Plate, "G" Gearless, "F" Friction, "QDR" Quick Detachable Reversible, "R & M" Robbins & Myers. NOTE—37½x5½r means that the rear tires are 37x5½, and the front are smaller. Detachable top, 300x, means $300 extra.

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Glide Model Little Changed

PEORIA, Oct. 1—The Bartholomew Co. has not made extensive changes in its new model. The chassis is 1½ in. lower and has a new pressed steel frame. Tops have been improved and all models are painted Meteor blue with black hood fenders and gear and ivory white wheels. The engine is a 3⅛ x 5 block six, with Westinghouse electric equipment. Other important components are disk clutch, Hotchkiss drive and floating axle with spiral bevel gears. Both four- and five-passenger models are $1,395. Detachable sedan top for either is $400 extra.

Aircraft Board Reorganized

WASHINGTON, Sept. 29—The Senate adopted to-day, without a dissenting vote, the Sheppard-Hulbert bill as amended by the House. This provides for an Aviation Aircraft Production Board of nine members and carries an appropriation of $694,000,000. The personnel of the board will include three naval and three army experts and three civilians, all to be appointed by the President. The chairman will be a civilian member and it is reported that Howard E. Coffin will hold this position. It is expected that F. A. Deeds will remain on the board, though the status of Sidney D. Waldon is not certain. It is expected that the bill will be signed by the President to-day.

Motor Car Securities Quotations

	Sept. 29, 1917 Bid	Asked
*Ajax Rubber Co.	58	62
*J. I. Case T. M. Co. pfd.	80	82
Chalmers Motor Co. com.	2	6
*Chandler Motor Co.	74	76
Chevrolet Motor Co.	78	80
*Fisher Body Corp. com.	30¼	35
*Fisher Body Corp. pfd.	84	87
Fisk Rubber Co. com.	63	66
Fisk Rubber Co. 1st pfd.	102	105
Fisk Rubber Co. 2d pfd.	90	95
Firestone Tire & Rubber Co. com.	112½	115
Firestone Tire & Rubber Co. pfd.	101	103½
*General Motors Co. com.	99⅞	100
*General Motors Co. pfd.	81½	83
*B. F. Goodrich Co. com.	43	44
*B. F. Goodrich Co. pfd.	100	102½
Goodyear Tire & Rubber Co. com.	187½	190½
Goodyear Tire & Rubber Co. pfd.	101	103
Grant Motor Car Corp.	2¼	3¼
Hupp Motor Car Corp. com.	2¾	3¼
Hupp Motor Car Corp. pfd.	82	88
International Motor Co. com.	10	12
International Motor Co. 1st pfd.	..	50
International Motor Co. 2d pfd.	15	30
*Kelly-Springfield Tire Co. com.	42½	45
*Kelly-Springfield Tire Co. 1st pfd	85	91
*Lee Rubber & Tire Corp.	17½	18½
*Maxwell Motor Co., Inc., com.	32⅝	33
*Maxwell Motor Co., Inc., 1st pfd.	64	66½
*Maxwell Motor Co., Inc., 2d pfd.	19¼	20
Miller Rubber Co. com.	177	181
Miller Rubber Co. pfd.	100½	102
Packard Motor Car Co. com.	145	155
Packard Motor Car Co. pfd.	94	98
Paige-Detroit Motor Car Co.	24	26
Peerless Truck & Motor Corp.	10	12
Portage Rubber Co. com.	122	127
Regal Motor Car Co. pfd.	15	20
†Reo Motor Car Co.	25½	26⅛
*Saxon Motor Car Corp.	12	14
Springfield Body Corp. com.	⅛	6
Springfield Body Corp. pfd.	1	10
Standard Motor Construction Co.	9	10
Standard Parts Co. com.	75	85
Standard Parts Co. pfd.	97	..
*Stewart-Warner Speed. Corp.	64½	65½
*Studebaker Corp. com.	45	46
*Studebaker Corp. pfd.	90	90
Swinehart Tire & Rubber Co.	40	50
United Motors Corp.	24	24¼
*U. S. Rubber Co. com.	58	59
*U. S. Rubber Co. pfd.	102	103½
*White Motor Co.	43⅛	44
*Willys-Overland Co. com.	26	26¼
*Willys-Overland Co. pfd.	88	92

*At close Sept. 29, 1917. Listed N. Y. Stock Exchange.

†Par value, $10.

Coming—THE SHOW CALENDAR—*Events*

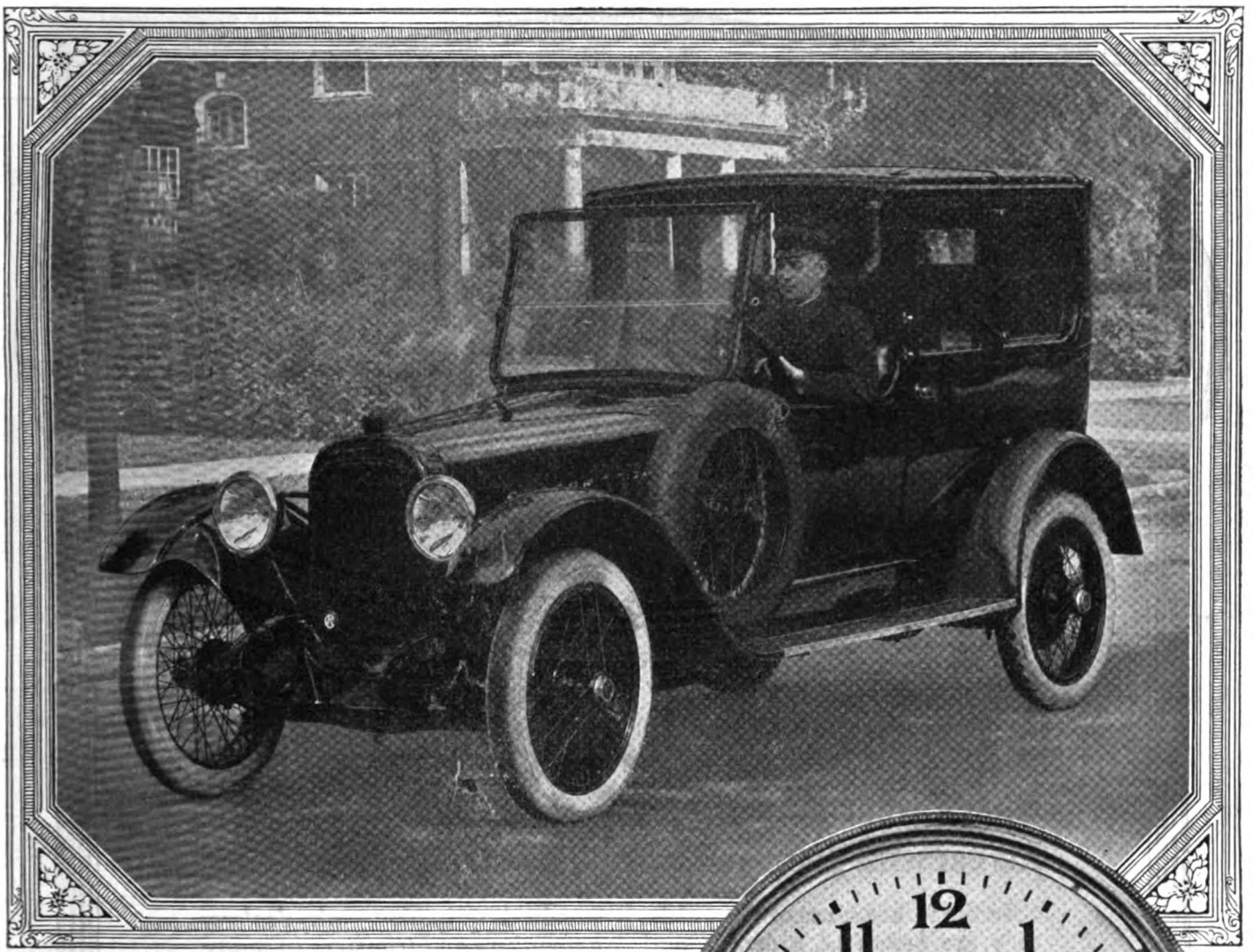
Shows

Wichita, Kan.	Show, International Wheat Congress, Automobile & Accessory Dealers' Assn.	Oct. 1-13
Buffalo, N. Y.	Closed Car Show, Buffalo Automobile Dealers' Assn., Elmwood Music Hall.	Oct. 1-6
Cincinnati, O.	Eighth Annual, Cincinnati Automobile Dealers' Assn., Music Hall. H. K. Shockley, Gen. Mgr.	Oct. 6-13
Boston, Mass.	Closed Car Show, Boston Automobile Dealers' Assn., various salesrooms. Chester I. Campbell, Mgr.	Oct. 6-13
Fort Smith, Ark.	Automobile Dealers' Assn. of Ft. Smith.	Oct. 8-13
St. Louis, Mo.	Open Week, St. Louis Automobile Mnfrs. & Dealers' Assn. R. E. Lee, Mgr.	Oct. 8-13
Toledo	Closed Car Show, Toledo Automobile Dealers' Assn., Coliseum. V. G. Kibby, Mgr.	Oct. 9-12
Pittsburgh, Pa.	Automobile Dealers' Assn. of Pittsburgh. Motor Square Garden. John J. Bell, Mgr.	Oct. 13-20
Dallas, Tex.	Dallas Automobile & Accessory Dealers' Assn., State Fair. S. I. Munger, Mgr.	Oct. 13-28
Atlanta, Ga.	Southeastern Fair, Atlanta Automobile Trade Assn.	Oct. 14-20
Columbus, O.	Columbus Auto Show Co., State Fair Grounds; J. P. Gordon, Chairman of Committee.	Oct. 18-27
Syracuse, N. Y.	First Annual Closed Car Show, State Armory, Syracuse Automobile Dealers' Assn.	Oct. 22-26
Worcester, Mass.	Casino and Bancroft Hotel, United Shows Co.	Oct. 22-29
Los Angeles, Cal.	Motor Car Dealers' Assn., Billy Sunday Tabernacle. J. S. Conwell, Mgr.	Nov. 5-10
Los Angeles, Cal.	Motor Car Dealers Assn., Billy Sunday Tabernacle.	Nov. 12-17
Denver, Col.	Automobile Trades Assn., Show Committee, Auditorium. G. A. Wahlgreen, Mgr.	Nov. 12-18
Springfield, Mass.	Auditorium Building, United Shows Co.	Dec. 3-9
New York, N. Y.	Eighteenth Annual, Automobile Chamber of Commerce, Grand Central Palace.	Jan. 5-12
Washington, D. C.	Carnival and Open House Week, Automobile Trade Assn. of Washington.	Jan. 11-18
New York, N. Y.	Motor Boat Show, Grand Central Palace, National Assn. of Engine & Boat Manufacturers.	Jan. 19-26
Montreal, Can.	National Motor Show of Eastern Canada, Montreal Automobile Trade Assn.	Jan. 19-26
York, Pa.	York Auto Dealers' Assn., Queen St. Tabernacle. T. F. Pfeiffer, Sec.	Jan. 21-26
Chicago, Ill.	Eighteenth Annual, Coliseum and Armory, National Automobile Chamber of Commerce.	Jan. 26-Feb. 2
Philadelphia, Pa.	Seventeenth Annual, Philadelphia Auto. Trade Assn., Commercial Museum Bldg.	Jan. 11-19
Milwaukee, Wis.	Milwaukee Automobile Trades, Inc., Auditorium; Bart J. Ruddle, Mgr.	Jan. 18-24
Mifflintown, Pa.	Automobile Trade Assn., Valley Stream Auditorium.	Jan. 22-26
Minneapolis, Minn.	Minneapolis Auto. Trade Assn., Walter B. Wilmot, Mgr.	Feb. 2-9
Kansas City, Mo.	Kansas City Motor Car Dealers' Assn., E. E. Peake, Mgr.	Feb. 9-16
St. Louis, Mo.	St. Louis Auto Mnfrs. & Dealers' Assn. Robert E. Lee, Mgr.	Feb. 11-16
Syracuse, N. Y.	Syracuse Automobile Dealers' Assn., State Armory. Harry T. Gardner, Mgr.	Feb. 18-23
Springfield, O.	Springfield Auto Trades Assn., Memorial Hall. C. S. Burke, Mgr.	Feb. 18-23
Pittsfield, Mass.	State Guard, State Armory. James J. Callagan, Mgr.	Feb. 18-23
So. Bethlehem, Pa.	Fourth Annual (cars 18-23; trucks 25-27), Coliseum. J. L. Elliot, Mgr.	Feb. 18-27
Newark, N. J.	N. J. Auto Exhibition Co., First Regiment Armory. Claude E. Holgate, Mgr.	Feb. 18-23
Omaha, Neb.	Omaha Auto. Trade Assn., Auditorium, Clarke G. Powell, Mgr.	Feb. 23-Mar. 2
Boston	Boston Automobile Dealers Association. Mechanics Building. Chester I. Campbell, manager.	Mar. 2-9
Trenton, N. J.	Trenton Auto Trade Assn., Second Regiment Armory. John L. Brock, Mgr.	Mar. 20-23

General and Racing

Uniontown, Pa.	Championship Races, Uniontown Speedway Assn.	Oct. 6
Danbury, Conn.	Track Races, Danbury Fair. H. P. Murphy, Director of Contests.	Oct. 6
Chicago, Ill.	Race	Oct. 13
Richmond, Va.	Track Races, Virginia State Fair. H. P. Murphy, Director of Contests.	Oct. 13
Columbus, O.	Dixie Highway Tour	Oct. 24
New York, N. Y.	Races, Sheepshead Bay Speedway	Oct. 27
New York	Convention, National Assn. of Auto. Accessory Jobbers, Hotel Astor.	Jan. 11-16

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CHALMERS TOWN CAR LANDAULET



CHALMERS wanted the *best* automobile clock!

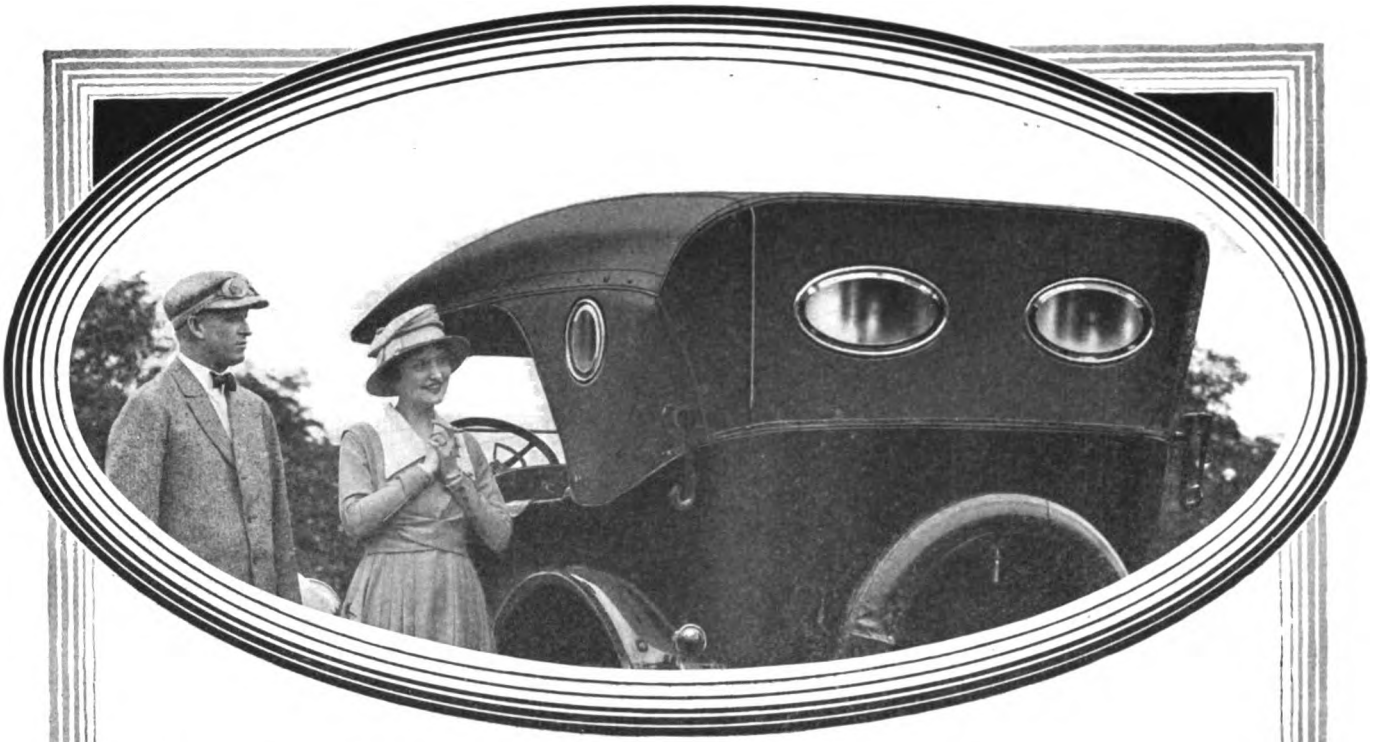
And Chalmers found the Waltham *best* because it is the only automobile clock that tells the right time all the time; *best* because it is the only clock adequately constructed for automobile use; *best* because it is the "official timekeeper" for the greatest and most successful cars in America; *best* because its reputation, beauty and performance make it a selling asset to any car which equips with it. So Chalmers chose the Waltham!

Is there a clock on *your* car—and if so, *does it do its duty?*

WALTHAM WATCH COMPANY, WALTHAM, MASS.

WALTHAM AUTOMOBILE CLOCK

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"Windows that outlast the top!"

That's what your customer gets when you fit out his car with Johnston Plate Glass Curtain Windows.

In the fullest sense of the words, they are *beautiful, practical and permanent.*

60,000 in use over a period of three seasons—and not a hint of dissatisfaction!

They lend distinction to the finest car—speed up the sales of new models—largely increase a used car's marketability—make riding more enjoyable than ever was dreamed of when the top shut off light and outlook!

That's why the car owner wants them—why automobile manufacturers are rapidly making them standard equipment—why *dealers, top-makers and trimmers in many places are doing more trimming business this season than ever before!*

Easy and profitable to install with either a new or an old top! And every car you equip attracts more trade to you.

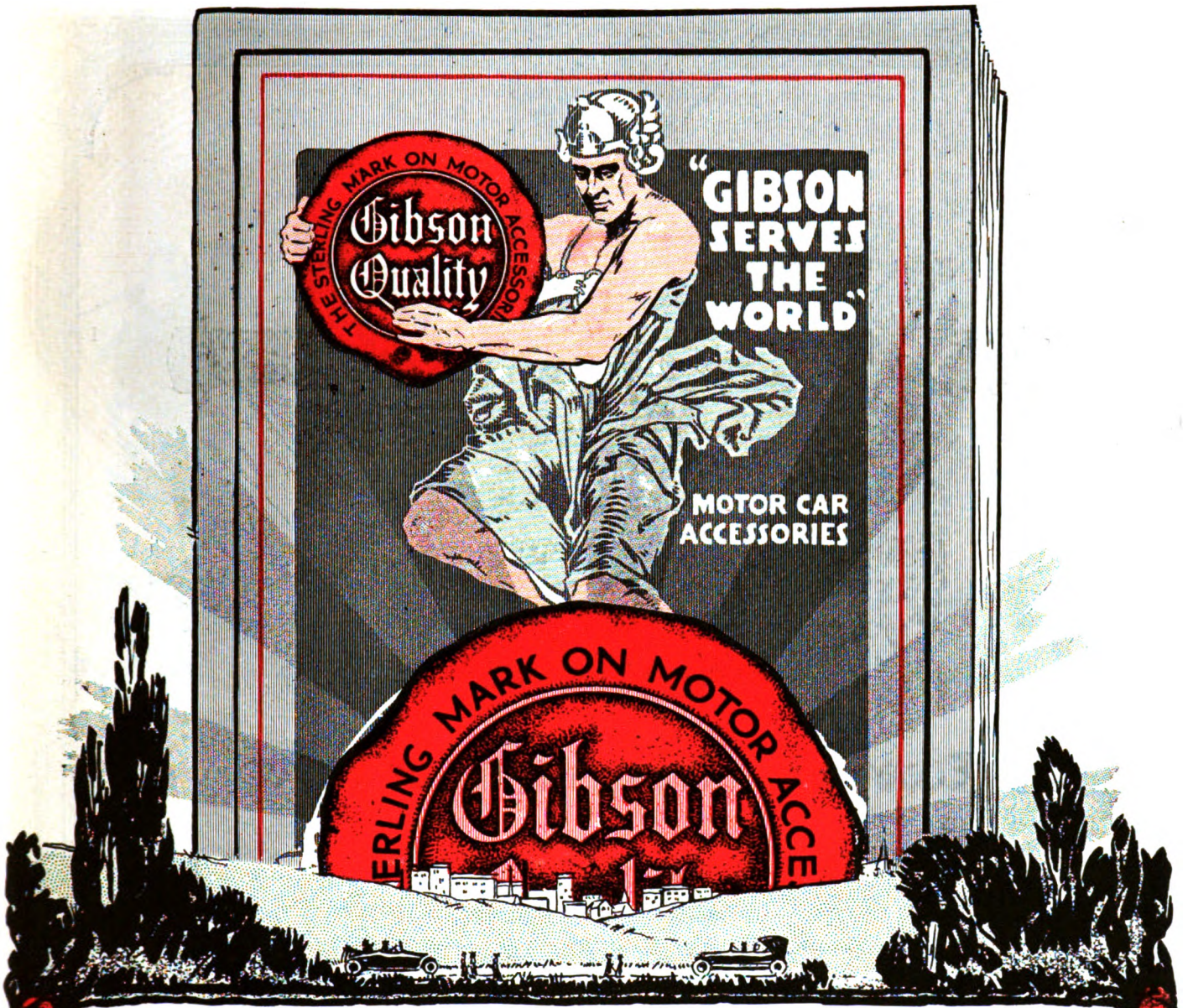
Wire your jobber today for samples and details. And write us for our latest fashion sheet "W"—of distinctive window sets and arrangements. Address the Wm. R. Johnston Mfg. Co., 359-61 East Ohio Street, Chicago.

Johnston Bevel Plate Glass Automobile Curtain Windows

(Formerly known as Hartford Curtain Windows) are ingeniously cushioned in wood, under a process fully protected by patents. Our trademark appears on every rim—a protection and a friendly warning.

JOHNSTON
PATENTED

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"Gibson Serves the World"

AND serves it well! Motor car accessories, tires, shop and electrical equipment go from the Gibson store-houses to dealers in every State in the Union—and even across the seas!

Gibson handles none but goods of established quality, value and salability. Orders are promptly handled and quickly shipped. Get our big 400-page Catalog and let us put you on our permanent mailing list. Free to any legitimate accessory dealer or garage operator—anywhere! Ask for Catalog G-27. Use the coupon—TODAY.

THE GIBSON CO., INDIANAPOLIS
Motor Car Accessories and Tires
Shop Equipment and Electrical Supplies

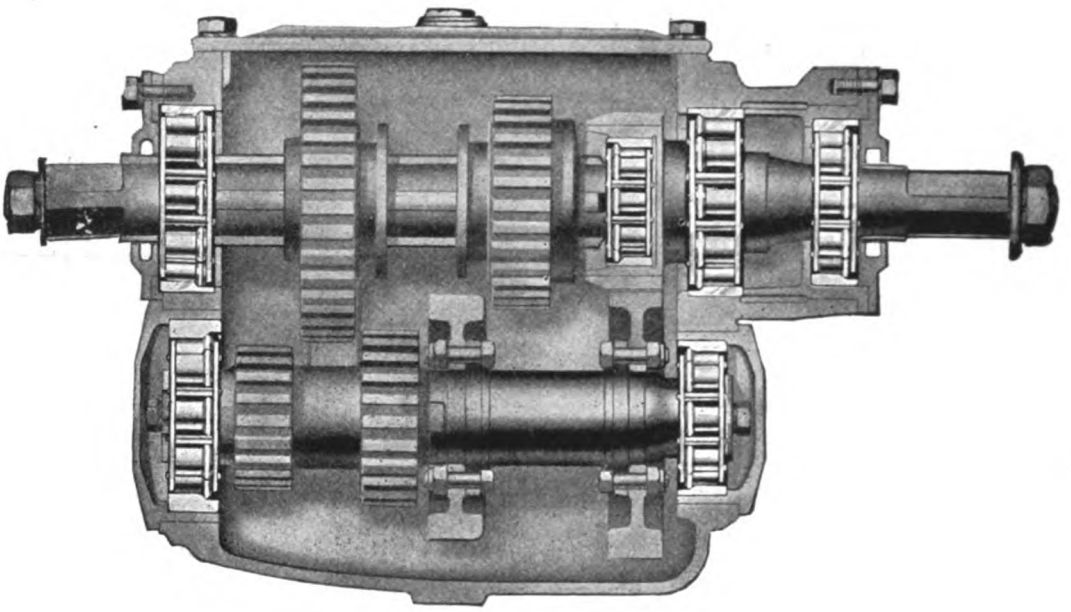
CLIP OFF THIS CORNER AND MAIL IT

Merely write your name and address below—mail us this clipped corner and we will send you, free, our 1917 Catalog, G-27.

Your Name and Address Here

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BOWER SAVES POWER



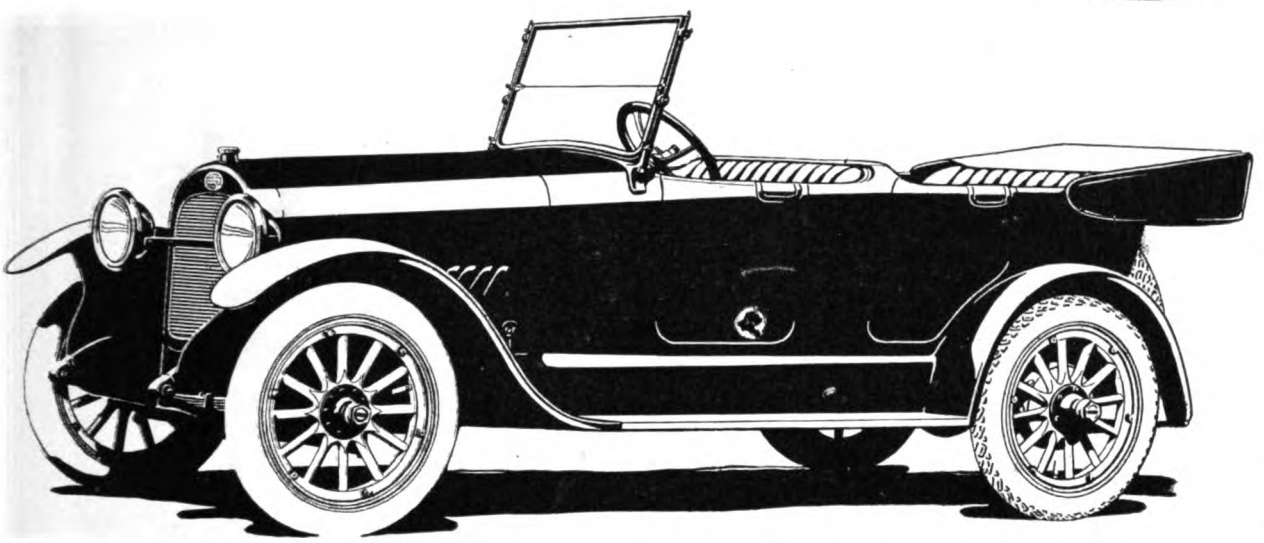
Economical Transmission of Power

THE bearings used in the transmission gear of pleasure car or motor truck must be simple in construction—noiseless in operation—long-lived—and, most important of all, free from the necessity of adjustment.

Bower Bearings *never need adjustment.* The roller and the raceway are always parallel, they are self-aligning and wear is reduced to the absolute minimum.

BOWER
ROLLER BEARING CO.
Detroit Michigan

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STEPHENS *Salient Six*

THE WHY OF PERFORMANCE

If we were to tell you that the Stephens Salient Six possessed style, elegance, comfort, flexibility and power, we would claim no more than scores of other manufacturers.

If, in turn, we were to tell you that the Stephens Salient Six possessed **more** style, elegance, comfort, flexibility and power than any other car in its class, we would be called upon for proof. It is that proof which we can give. We claim nothing radical. We attribute the superior performance of the Stephens Salient Six to a masterly, scientific refinement of approved principles.

Our perfected overhead-valve engine is economical. It burns ALL the gasoline. It is flexible and has a liquid smoothness of balance. Our springs are long and sensitive. Our touring and roadster bodies are honestly built, in our own factories. Our car, all in all, is a better car.

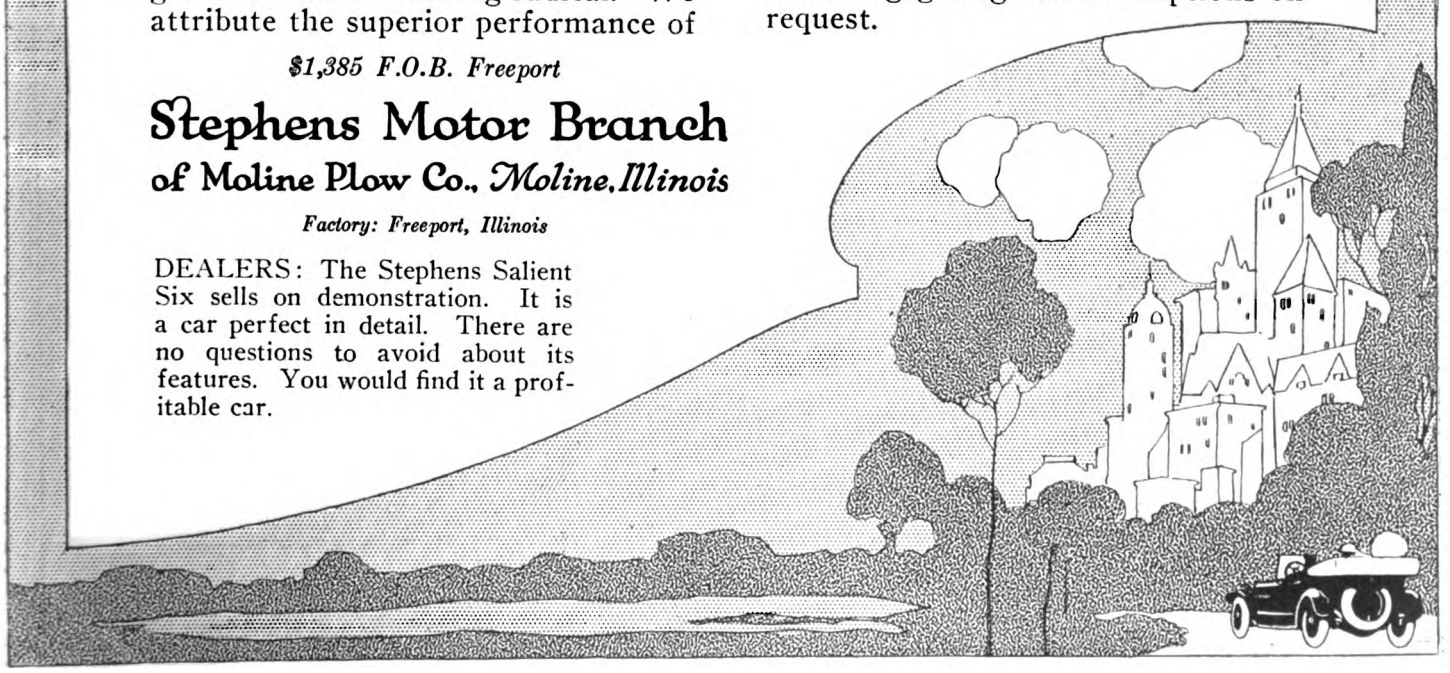
Catalog giving full descriptions on request.

$1,385 F.O.B. Freeport

Stephens Motor Branch
of Moline Plow Co., *Moline, Illinois*

Factory: Freeport, Illinois

DEALERS: The Stephens Salient Six sells on demonstration. It is a car perfect in detail. There are no questions to avoid about its features. You would find it a profitable car.



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Are Your Needs *SIMILAR?*

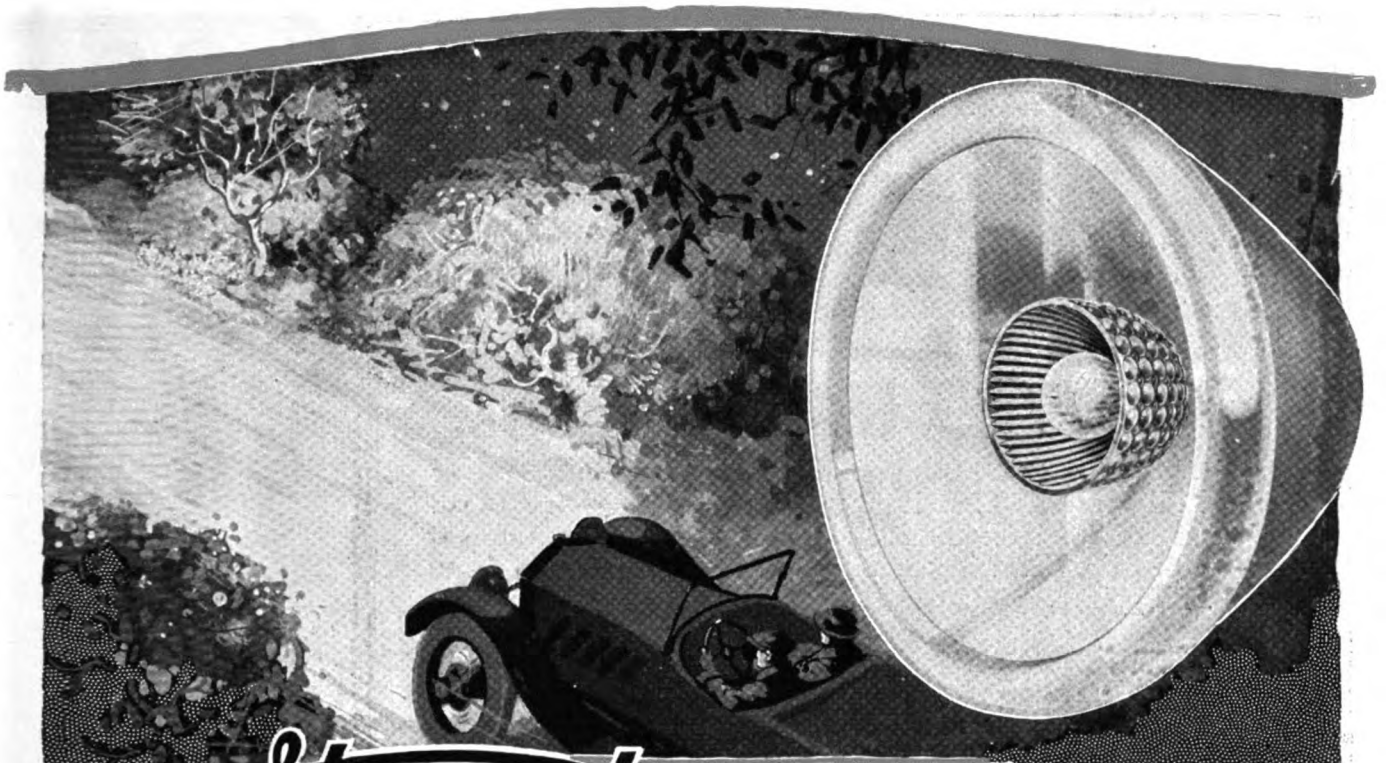
Fifteen Manufacturers have indicated to our CONTRACT WORK DEPARTMENT that they could use to advantage information as to where they could place the following lines of surplus manufacturing work:

Castings (steel, brass, bronze or aluminum)
Dies
Tool
Metal Stampings
Punch Press Work
Screw Machine Work
Machine Parts
Gear Cutting
Grinding
Cam Cutting
Bar and Clutch Work
Forgings
Drop Forgings
Lathe & Milling Machine Work
Patterns (wood and metal)
Plating
Automobile Stampings

and other lines.

In this connection you can consult with profit our CONTRACT WORK DEPARTMENT, Page 117 in this week's issue.

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Stewart LENS

Provides a flood of light, which illumines the full width of the road including side ditches, and **without glare.**

This is the big point in the Stewart Lens—complete and adequate illumination **without glare.**

Gives complete illumination, because the light is diffused at its source (the light bulb) before it reaches the reflector.

Not only provides 100% light, but a light that is safer to drive by than ordinary headlights.

Beause it gives no glare, the Stewart Lens can be used for city driving, with full lights turned on, with perfect safety and without danger of police censorship.

The design is based on scientific principles. Consists of a cup-shaped bowl which surrounds the light bulb. At the back it fits around the bulb stem. The forward end is open. The outer surface is covered with a series of curved elevations; the inner surface is ribbed.

When the lights are on, the Stewart Lens gives a rich, distinctive appearance to the headlight; adds to the appearance of the car.

The Stewart Lens will fit any car. Can be installed on any headlight. Produces the same perfectly diffused **no-glare** light on any size headlight. There is only one size; one model. Dealers and Jobbers can fill all orders from one stock item.

The price is $2.00 per pair, complete. At this popular price the Stewart Lens is within reach of every car owner.

Installation takes but a minute—remove front glass, take out lamp bulb, place the bulb stem through the back of the Stewart Lens and replace it in the headlight.

Stewart-Warner Speedometer Corporation
CHICAGO, U. S. A.

$2
PER PAIR

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Where The Carabao Hauls Texaco

In spite of the advent of the automobile the carabao is still largely employed as a beast of burden in the Philippines. As often as not his load consists of Texaco Products as the accompanying drawing, taken from a photograph, shows.

TEXACO MOTOR OIL

is extensively used throughout all the civilized parts of the Philippines. That it gives as satisfactory service to car owners in those distant islands as it does here at home is proved by the following letter, one of many received from the Philippines.

Manilla, P. I., January 5, 1915.

Messrs. Wise & Co., Ltd.
Agents The Texas Company
Manilla, P. I.

Dear Sirs:

Beg to advise you that I used Texaco Auto Gasoline and Texaco Motor Oil "M" throughout the entire meet at Baguio, including the endurance run from Manilla to Baguio.

I came in first in the endurance run and the hill climb, and the second in the 100 mile run and in the 16 laps race.

I had no carbon trouble whatever, and both the oil and the gasoline were entirely satisfactory. In fact, I think that Motor Oil "M" is the best that I have ever tried for an Overland Car.

Very truly yours,
(Signed) L. W. Breaker.

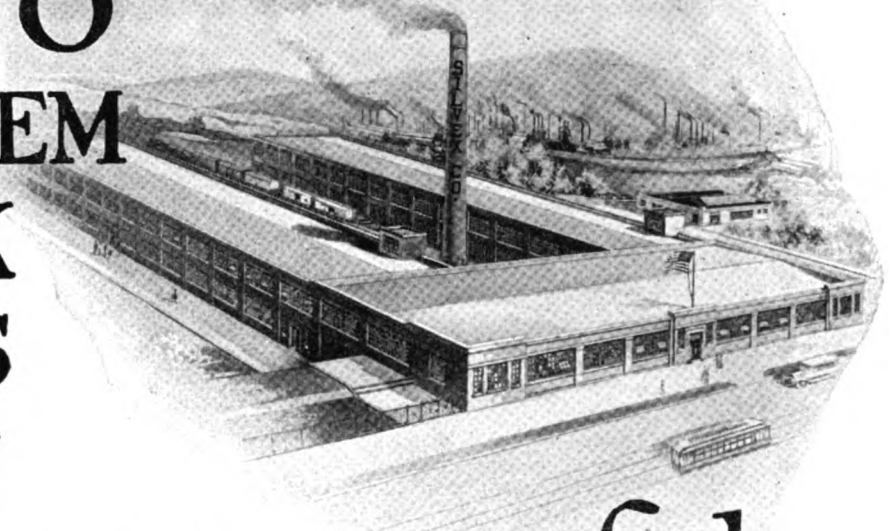
When you buy motor oil buy Texaco. The best way, the safest way, to buy is in one or five gallon cans. You can identify Texaco by its clear, clean color.

THE TEXAS COMPANY
New York Chicago Houston
DISTRIBUTING OFFICES IN MOST CITIES



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The New Silvex plant is equipped to make 50,000 BETHLEHEM SPARK PLUGS a day



or in the course of the year twice the number needed to equip all the new cars planned *for the whole year of* 1918

BETHLEHEM
SPARK PLUGS
THE SILVEX COMPANY
E. H. SCHWAB *Pres.*

BETHLEHEM PRODUCTS - - BETHLEHEM PA.

When writing advertisers please mention Motor World—It identifies you

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Thousands of Motorists

—and more than five hundred dealers—

are taking advantage of the features which only *Permalife* offers—not only storage battery excellence but the nation-wide system of life-long exchanges at $1.25 which guarantees perpetual service to the motorist.

The motorist's appreciation of this feature alone is building up business for *Permalife* dealers in all parts of the country—it can mean but one thing to him: increased profits through a larger volume of sales. Those who were quick to see the money-making possibilities of the *Permalife* contract are profiting handsomely by their keen judgment.



Grasp *your* opportunity for bigger profits based on the storage battery convenience and economy to the motorist which makes sales sure.

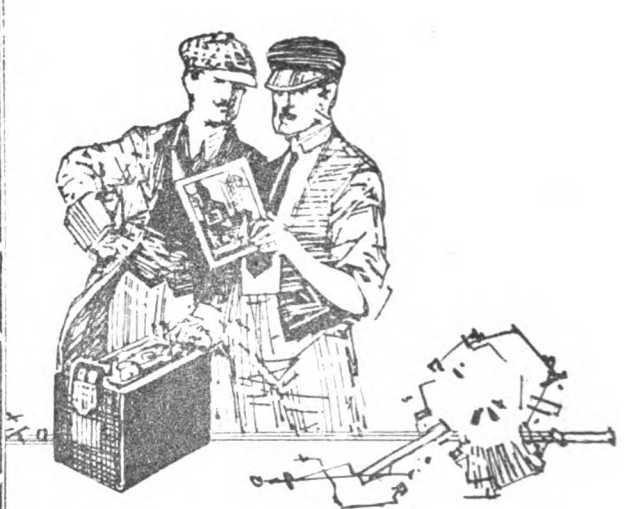
Send for *your* copy of this book at once

Address Dept. M W 10 for the book "What *Permalife* Is." It presents the details of this unusual battery.

Permalife Storage Battery Company

Poughkeepsie, New York





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Get this display rack for fan belting-free



HERE'S something every dealer needs—a convenient, attractive display rack for fan belting. Enables you to keep your stock in perfect condition and all together in one place—where you can get at it easily and quickly. Saves floor space. Adds to the attractiveness of your store. Made of wood, handsomely finished and surmounted by beautiful steel sign, lithographed in brilliant colors, which will attract attention to your stock and help make sales.

Rack furnished free to dealers with a fast-selling assortment of HLB fan belting—fan belting that has back of it almost fifty years of successful belt-making experience—fan belting that's used and endorsed by a majority of leading pleasure car and truck manufacturers.

All HLB fan belting (round, "V" or flat) is now packed so it can be displayed in this convenient new rack. Thus it will sell even better than ever before—and yield you quicker profits.

The attached coupon will bring you full details of this desirable rack and our attractive proposition to dealers—together with the name of jobber nearest you. Sign and mail it—*now*.

Hide, Leather & Belting Company

227 D-S. Meridian Street, Indianapolis

FLAT, ROUND *and* "V" *Fan Belting,* LEATHERTEX *Cone Clutch Facings,* RAWHIDE CUT LACING, LEATHER STRAPS, *Etc., Etc.*

HLB

Write

Hide, Leather & Belting Co., Indianapolis

Please tell me more about your new display rack for fan belting, together with details of your attractive proposition to dealers.

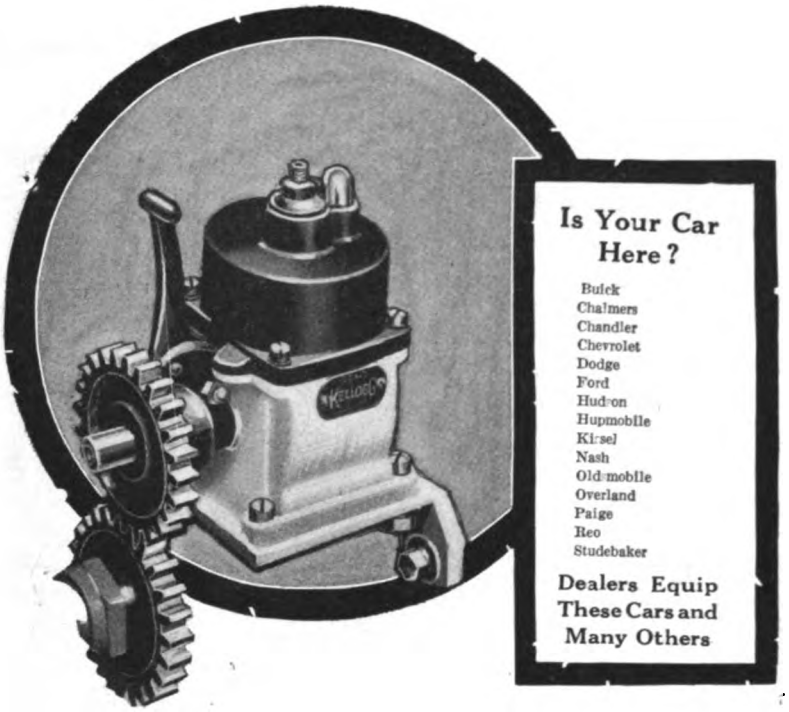
Name .....

Address .....

.....

M. W. 10-3-17

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The Pump That Challenges Poor Tire Adjustments

KELLOGG Engine Driven Tire Pump

A tire to give exceptional endurance, long life, vitality and also to secure good adjustments for the owner **must be kept up to proper pressure at all times.**

Many manufacturers have chosen the KELLOGG as standard equipment because properly inflated tires mean much for the comfort, convenience and economical service of the automobile.

The KELLOGG is also recommended and used because of these exclusive features:

"No Oil Spray"—Guaranteed
"All Metal Construction"—Everlasting

If your car is not already equipped with the KELLOGG, you will find a place on your car designed for it.

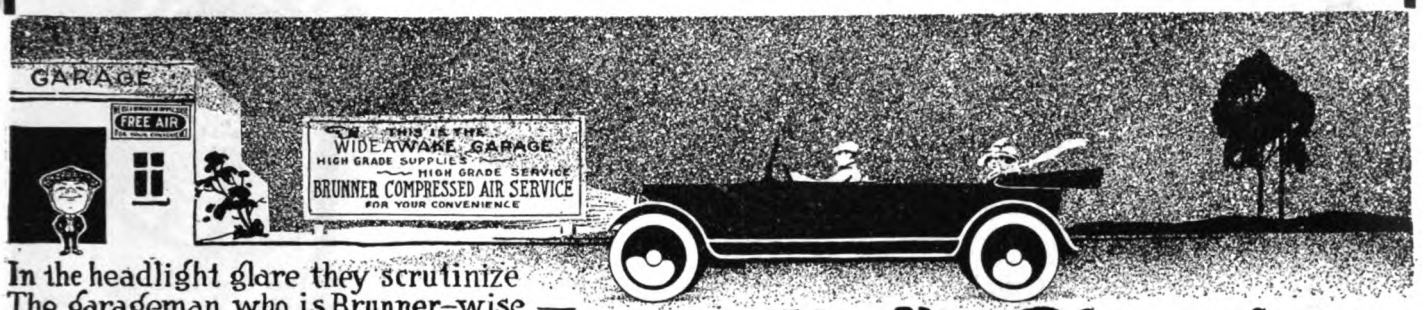
Send name and model of your car. Dealer's name appreciated.

KELLOGG MFG. CO., Rochester, N. Y.

Branches and Distributors in All Principal Cities

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BRUNNER



In the headlight glare they scrutinize
The garageman who is Brunner-wise —
On the Brunner sign they rest their eyes
And stop for air and – some supplies.

YES, BRUNNER SERVICE SATISFIES

SERVICE that satisfies is the one big dominant factor in the administration of the garage business of today, and the success of the modern garage is dependent entirely upon the class of service it renders.

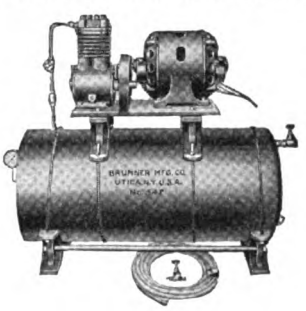
Mr. Garageman, when they flash their headlights on you at night, are you prepared to render such service? Does your service satisfy? If not, then you should seriously consider the matter of installing Brunner Service, because Brunner Service always satisfies.

INCREASE YOUR INCOME BY IMPROVING YOUR SERVICE

INSTALL A BRUNNER AIR COMPRESSOR

Seven Standard sizes—any number of possible combinations to meet the garageman's requirements. No restriction of the lubrication to invite disaster

No matter how good your compressed air service may be, Mr. Garageman, Brunner Service would be an improvement, because it would strengthen your standing with the trade you have and—it would bring to your door the trade of the Brunnerwise Motorist and increase your sales of gasoline and supplies, because the Brunnerwise Motorist is a liberal spender and appreciates the service that satisfies.



The Brunner is the pioneer of the present day air compressors—it was not put on the market ten years before the garage was thought of—it was designed and built especially for the garageman's use and it has been consistently demonstrating its sterling qualities to the garageman in the garage ever since we have had garages.

The sale of the Brunner Air Compressor to the garageman is far greater than any other air compressor made—the reason is obvious.

YOU CAN BANK ON A BRUNNER AIR COMPRESSOR

And any one of the high-class reputable jobbing houses who distribute the Brunner Line will be glad to recommend and guarantee a Brunner outfit to meet your special requirements. We will be glad to send you the name of the Brunner Jobber covering your town, and our engineers will be very glad to assist you in making your compressed air service—a service that satisfies.

Our No 14 Catalog and Garageman's Handbook on Compressed Air are yours for the asking. Write for these books today and get the facts regarding the Garage Air Compressor situation.



BRUNNER MANUFACTURING COMPANY

Main Office and Plant:
UTICA,
N. Y.

Cincinnati Branch:
CINCINNATI,
OHIO



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FAIR LIST PRICES

FAIR TREATMENT

The New Horseshoe Above the Door

GOODRICH TIRES

Where You See This Sign Goodrich Tires are Stocked

BUT the Goodrich Dealer's Sign is the *sign* of the good *fortune* of *good business, not* of *luck.*

Unlike the old horseshoe, its good fortune is founded on *solid business sense*—Goodrich *marketing policies.*

It is a trade magnet because every tire user knows that where he sees that sign he takes no risk either with the dealer or the tire he buys.

He knows that Goodrich Fair Treatment stands behind the Goodrich Dealer's Sign ready to make good to him anything the tire may not.

This new "horseshoe" of good business is magnetized with pulling power of Goodrich's great *prestige* as the world's greatest and oldest rubber maker.

It is magnetized with the Goodrich *reputation,* which means quality of tires and good faith of guarantee, wherever rubber is known.

Sister sign of the Goodrich Guide Post which points the right way to a nation of automobilists, its friendly, familiar face welcomes every motoring tourist who passes your door.

Enlist all these forces and the great selling force of Goodrich's nation-wide advertising campaign—national monthlies and weeklies, the metropolitan dailies and your city press—

BY HAVING A GOODRICH DEALER'S SIGN OUTSIDE YOUR STORE SELLING FOR YOU.

GOODRICH

SILVERTOWN CORD TIRES SAFETY TREAD FABRIC

Goodrich Brown Tubes and Gray Tubes

The B. F. GOODRICH COMPANY
Akron, Ohio

BEST IN THE LONG RUN

When writing advertisers please mention Motor World—It identifies you

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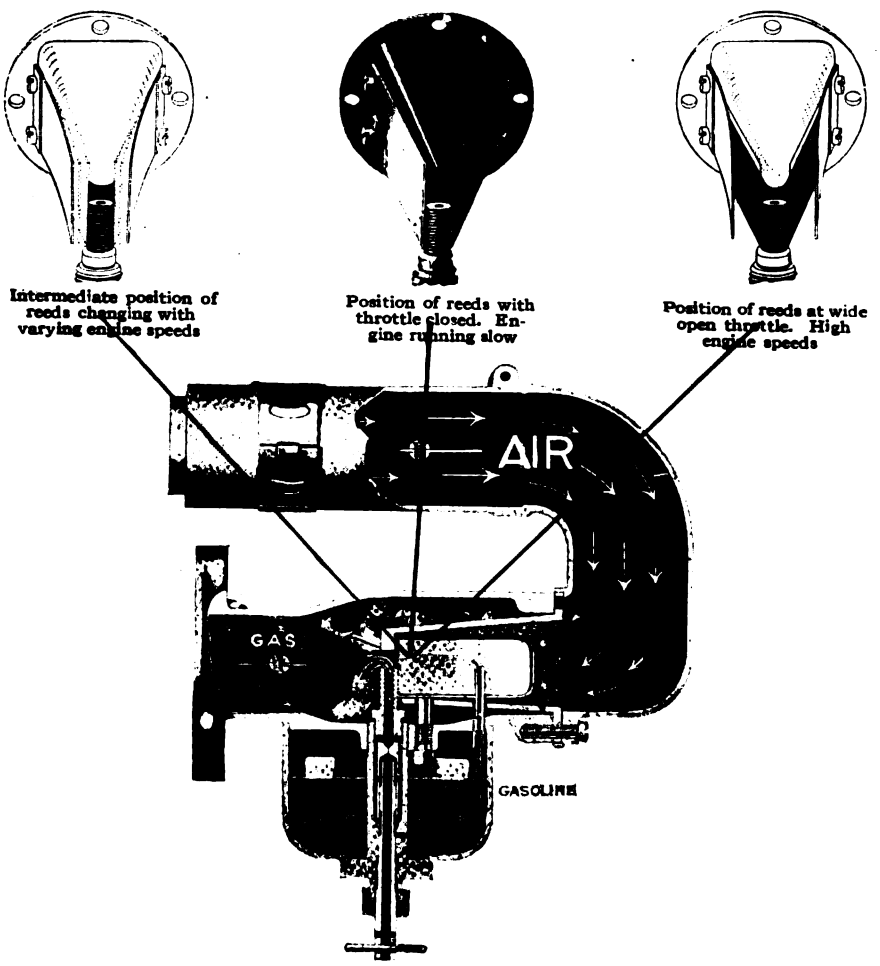
Tillotson
CARBURETOR

The efficiency of a carburetor depends largely upon the action of its air valve. It is its most vital part. In the Tillotson this action is absolutely automatic. Two flexible easily yielding steel reeds expand to maintain at *all* engine speeds, the *highest possible vacuum* and *greatest air velocity* at the point where the fuel nozzle is located.

A variable venturi in principle.

This is just one reason why automobile engineers prefer the Tillotson design, and it accounts for the fact that we have had to treble our production in order to meet the tremendous demand.

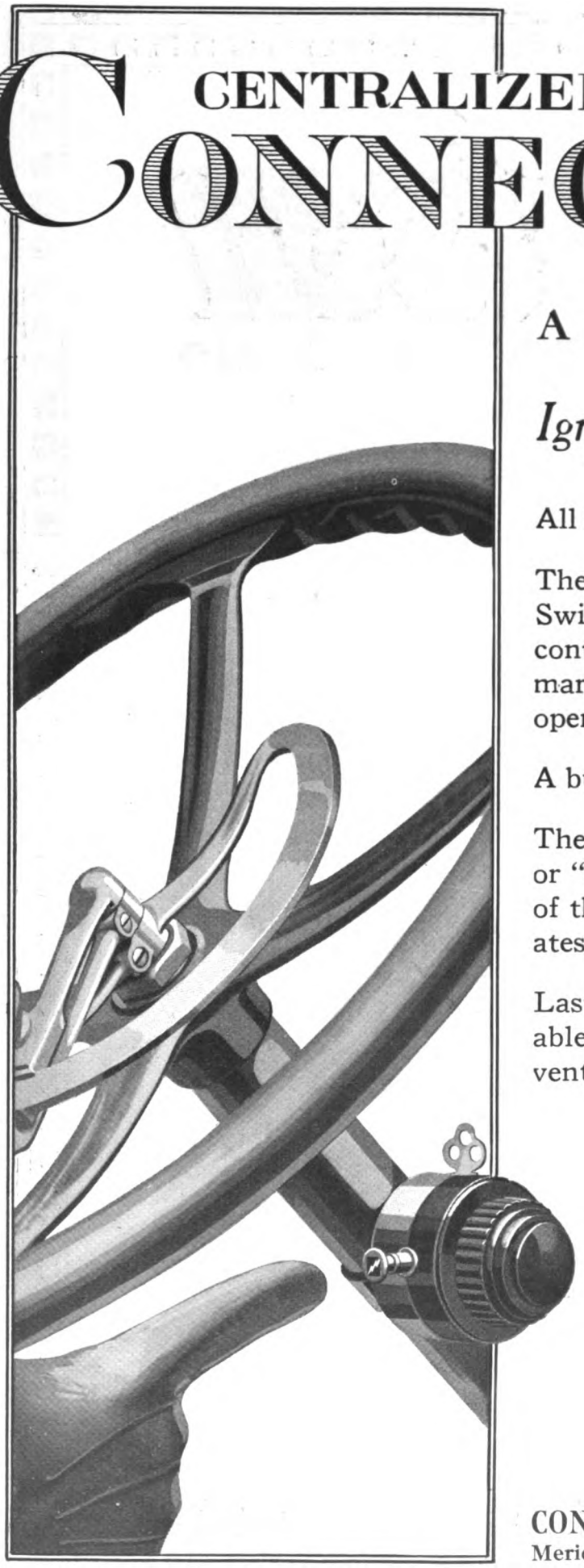
We are now in the position where we can figure on your requirements. Just say the word.



The Tillotson Manufacturing Company
Toledo, Ohio

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CENTRALIZED CONTROL UNIT
CONNECTICUT



A Steering Column Switch

Ignition——Horn——Lights

All in one—all together.

The Connecticut Steering Column Switch is a masterpiece of centralized control—a model of completeness and a marvel of simplicity—both in design and operation.

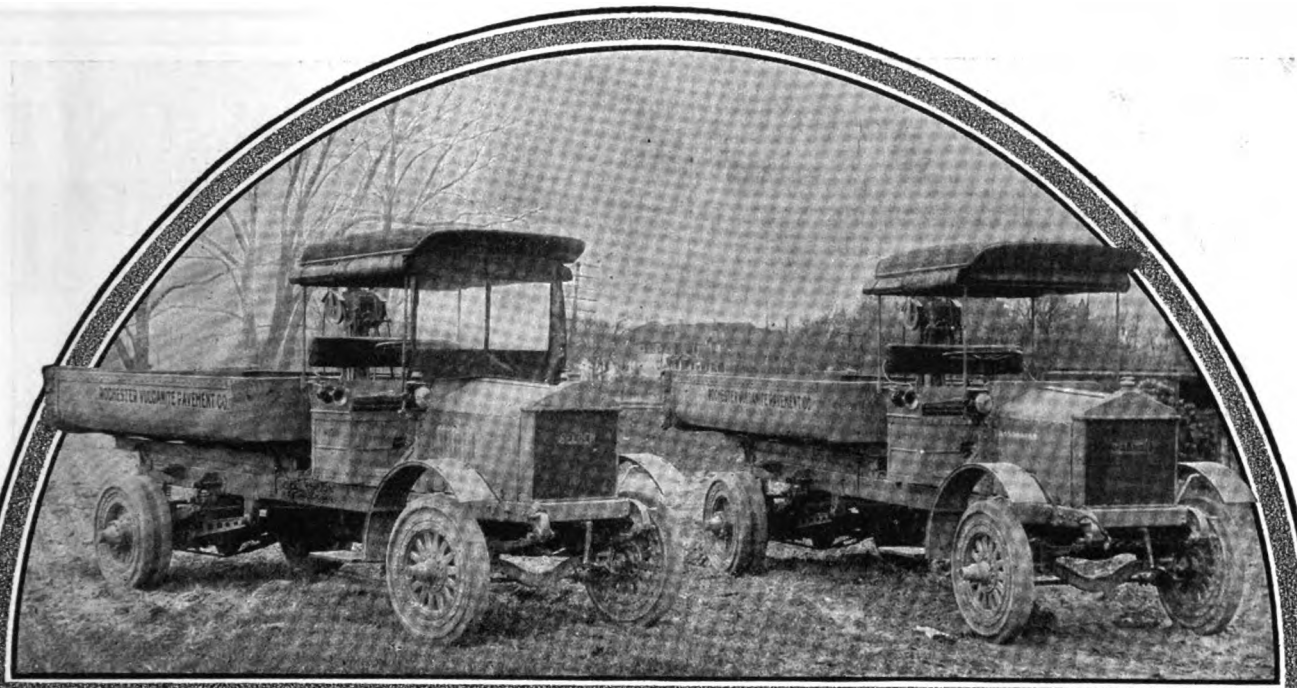
A button controls the ignition.

The lights are switched "bright," "dim" or "off" by turning the knob on the side of the control. Pressing the knob operates the horn.

Last, but not least, is the lock. It enables you to lock the ignition and prevents tampering with lights or horn.

CONNECTICUT TELEPHONE & ELECTRIC COMPANY
Meriden Conn.

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Selden Trucks

SELDEN TRUCKS · SELDEN · IN-BUILT QUALITY

Selden Truck Makes Better Record Than Higher Priced Trucks

A truck user in Silver City, New Mexico, informs us that his Selden truck has been in use *every day* and a great many nights for 4½ years and has never given him an hour of trouble. He also says, "We have a number of other makes of trucks in use, but not even the ———— and the ———— (here he mentions the names of two of the highest priced trucks on the market to-day) have equalled the record of our Selden Truck."

This record, yet common, performance of the big, powerful Selden Truck is especially significant because of the unusually rough nature of the roads in and around Silver City. Put Selden Trucks to the test, and they will make good every time.

Dealers: *We want to sell you the Selden Agency on the merits of Selden Trucks themselves. When you take over the Selden Line, you take a line of trucks that will build up a reputable truck business for you—a substantial, profitable, ever-increasing business. We firmly believe that our dealer proposition is the best truck proposition in the United States today. Wire or write for it if we are not represented in your territory.*

Selden Truck Sales Company

Rochester, N. Y., U. S. A.

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NEXT week—the big Winter Business Number. If you are a dealer, a jobber or a garage owner be sure that every department head gets his copy.

¶ If you are a manufacturer of any product that is merchandised thru the trade be sure to get in the issue with good winter business copy and with proper space.

¶ Last forms close Monday, Oct. 8, at noon. Get copy to us promptly. Send it now.

MOTOR WORLD

239 WEST 39th STREET

NEW YORK CITY

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Speaking of "Supremacy"

You, in company with all live dealers, must be looking ahead for your 1918 line. Consider the Dorris. Here is supreme perfection in a passenger car. It represents just an even dozen years of applied mechanical genius.

The Dorris is easily identified among the few really high-grade cars of America—a conspicuous example of thoroughly correct construction. Safe, stanch and strong, with speed a-plenty—and luxurious.

DORRIS

"Built up to a Standard, Not down to a Price"

Dorris body-work has been refined to the final point. Trimmings—regally superb. Accessories—the finest. And under the hood, the Original Dorris Perfected Valve-In-Head Motor—a trustworthy power plant that spells economy and downright good behavior.

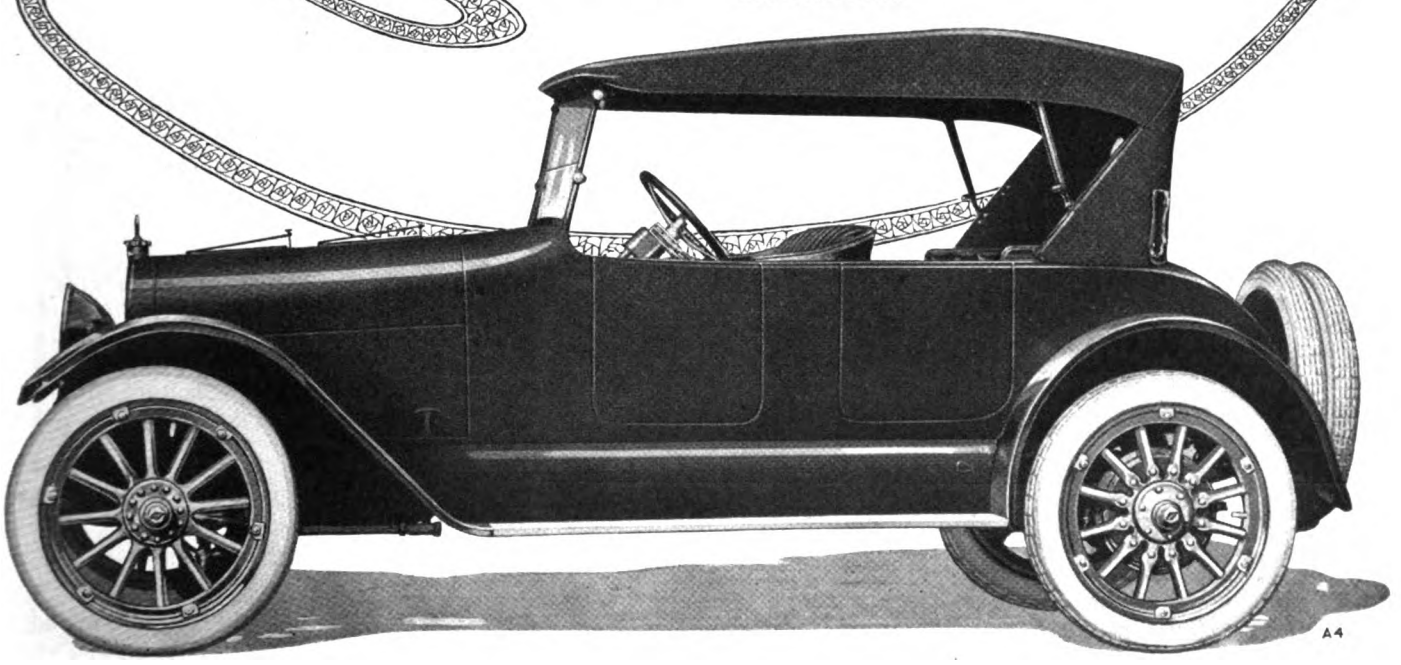
Four-Passenger Four-Door Tourist	$2785
Seven-Passenger Touring Car	2785
Five-Passenger Sedan	3350
Seven-Passenger Limousine	4150

All the above on the improved Dorris I-C six-cylinder chassis (prices f.o.b. St. Louis).

If you are in touch with the power-wagon demand, consider the Dorris Two-Ton Worm Drive Truck (chassis price $2285, f.o.b. St. Louis). It is sturdy, dependable, built like a battleship—a worthy member of the Dorris family.

Our proposition provides the most factory co-operation you have ever heard of. Write us *today*.

DORRIS MOTOR CAR CO.
Laclede and Sarah, St. Louis, Mo.
Manufacturers



A4

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"Commerce TRUCKS FOR BUSINESS"

SEVEN YEARS

Seven years of continuous and successful manufacturing have produced this One-Ton Commerce Truck.

We were pioneers in the commercial car industry. More than seven years ago we began studying motor transportation and the transportation problems of the manufacturers and merchants of the country. The 1911 model was the result.

We have made it our creed to build slowly and carefully, to put only the soundest engineering practice, the best materials, the best workmanship into Commerce Trucks.

In these seven years we have built and sold thousands of Commerce Trucks.

They are in operation today in all lines of business, in all parts of the United States.

They are being kept in service and efficient operation by hundreds of successful Commerce Dealers whom in these seven years we have chosen with the same caution and care.

These seven years of manufacturing experience and intimate contact with the large business of the country have led us to some interesting conclusions.

We have decided that there is a greater need, a wider market for the one-ton truck than for any other truck.

We believe that in the one-ton truck there center the widest range of utility, the highest efficiency, the greatest economy of time, labor and money.

Therefore, the Commerce designs, builds and sells but one model—the One-Ton Commerce Truck.

Upon that model—to make it the best that money, brains and intensive manufacture can develop—we are concentrating our entire organization.

It is and always has been our policy to make the Commerce the most completely equipped one-ton truck on the market.

With a wide range of body designs, with every feature and detail that mean utility and service, the One-Ton Commerce is the one-ton truck best adapted to the greatest diversity of business.

Applications will be considered for District Managers of ability and experience to represent this company in organizing truck dealers for open territory.

One-ton Chassis - - -	$1340
With Express Body - -	$1375
With Post Top and Storm Curtains - - - -	$1450
With Standard Stake Body	$1490

All Prices f. o. b. Detroit

A choice of three Bodies; Remy Starting and Lighting system: Willard 80 Ampere storage battery; head lamps with dimmers; Stewart Vacuum system and Pierce automatic Governor; special type truck-bumper; folding windshield, driver's spotlight, driver's seat for three persons; wheelbase 126 inches; loading space on Express and Top bodies 9 feet 2 inches; on Stake body, 10 feet; Truck Type Motor—26 H. P. Torbenson Internal Gear Drive.

Commerce Motor Car Company
30 Mackie Avenue
Detroit, Mich.

NOTE TO DEALERS—This advertisement is one of a series appearing in The Saturday Evening Post and other national magazines. Watch for the Commerce advertisements.

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Ford Starts and Brakes Like Big Car

Put a set of Cork Inserts in the Ford transmission and it acts like a different car. That bucking at the start—that lurch into reverse—the shivering and chattering under the brake—which embarass the driver and are hard on the car—all disappear. The Ford goes into low as smooth as you please. A light touch of the toe and braking begins instantly but smoothly. A sudden pressure in the emergency, and the car stops within a few feet, without chattering or rattling.

$3 per set of 3

ADVANCE CORK INSERT

TRADE MARK REG. COPYRIGHTED 1917

TRANSMISSION LININGS FOR FORDS

stop the slipping through the use of buttons of cork—a patented feature no other lining can have. Cork never gets hard or polished. It's hard, polished linings that cause all the trouble in ordinary transmission linings. Cork Insert Linings don't slip—don't grab. They make the smoothest, safest, most economical linings for the Ford transmission ever devised. They give a better driving, better braking car, and a lining that outwears ordinary linings three to one.

Dealers—Order from Your Jobber!

Order at least a dozen sets of Cork Inserts next time your jobber's salesman drops in. Cork Inserts mean better profits for you—better service and satisfaction for the user. They are the livest line in the field. Strongly advertised. Your customers know about them. Stock them and they'll move fast. Send coupon if your jobber can't supply you.

Ford Motor Kept Cool—Fan Kept Fanning by Fan Belt That Doesn't Slip

When the Ford fan belt runs as it ought, the Ford motor is kept cool and overheating is avoided. But the fan can't fan properly if the belt is slipping and lays down on the job. The slippage of the ordinary Ford belt runs as high as 25% to 50%.

ADVANCE CORK INSERT

TRADE MARK REG. COPYRIGHTED 1917

FAN BELT FOR FORDS

stops slipping. The buttons of cork, unaffacted by water or oil—grease or dirt—grip at the first turn of the motor and keep the fan fanning. Cork Insert Fan Belts outwear several ordinary fan belts and do the work better as long as they last.

Advance Automobile Accessories Corp.

Dept. J 13-1 56 East Randolph Street, Chicago

Dealer's Coupon Check and Mail Today

Advance Automobile Accessories Corp.
Dept. J 13-1 56 East Randolph St., Chicago

- ☐ Send one dozen sets of Advance Cork Insert Transmission Linings for Fords.
- ☐ Send one dozen Advance Cork Insert Fan Belts, 1917 Ford.
- ☐ Send one dozen Advance Cork Insert Fan Belts, 1916 or earlier model Ford. (Regular dealer discounts to apply.)

Name .....

City ..... State .....

Jobber's Name .....

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BAILEY NON-SKID NON-STALL DIFFERENTIAL

The wheel that has the "grip" gets the power!

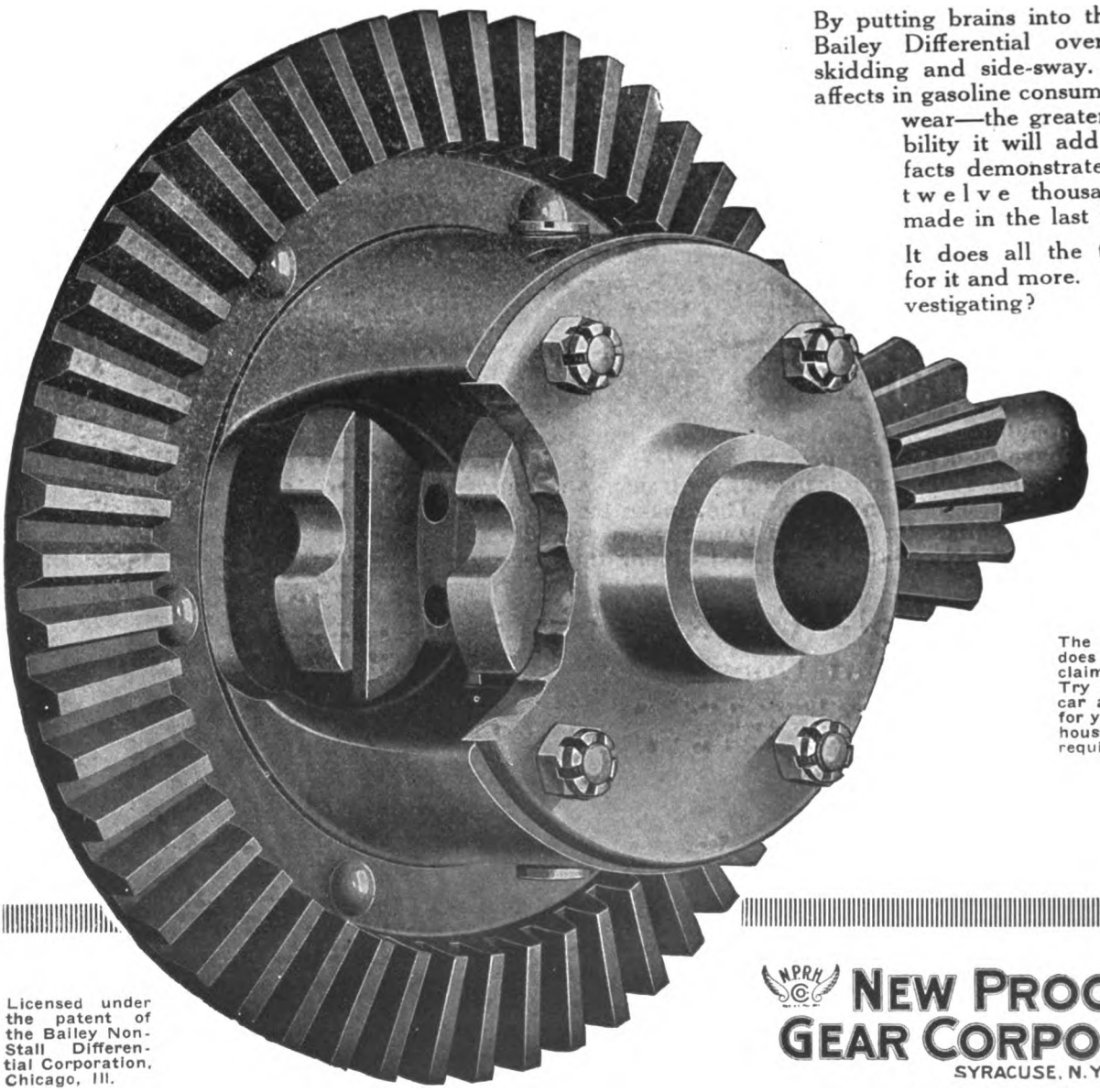
In this way the Bailey Differential reverses the action of the ordinary differential—it delivers motor power to the wheel that can use it.

The Bailey Equipped car, as a result, will not bog in a mud-hole, stall in a gravel pit, sand bank nor stand helpless on wet or icy pavement. There is none of that "digging in" action or spinning of wheels that frazzles tempers, wastes gasoline and grinds tires to shreds. As long as one wheel has driving purchase on the road the Bailey Differential automatically shifts the full power of the motor over to it and the car drives ahead without an instant's hesitation.

On the turn it compensates perfectly. The outer wheel swings around the corner, running free while all the power is transmitted to the inner wheel. On the straightaway both wheels are locked into what is practically one solid axle—both wheels revolve at the same rate regardless of road conditions.

By putting brains into the rear axle the Bailey Differential overcomes stalling, skidding and side-sway. The saving it affects in gasoline consumption and in tire wear—the greater safety and stability it will add to any car are facts demonstrated in more than twelve thousand installations made in the last two years.

It does all the things we claim for it and more. Isn't it worth investigating?



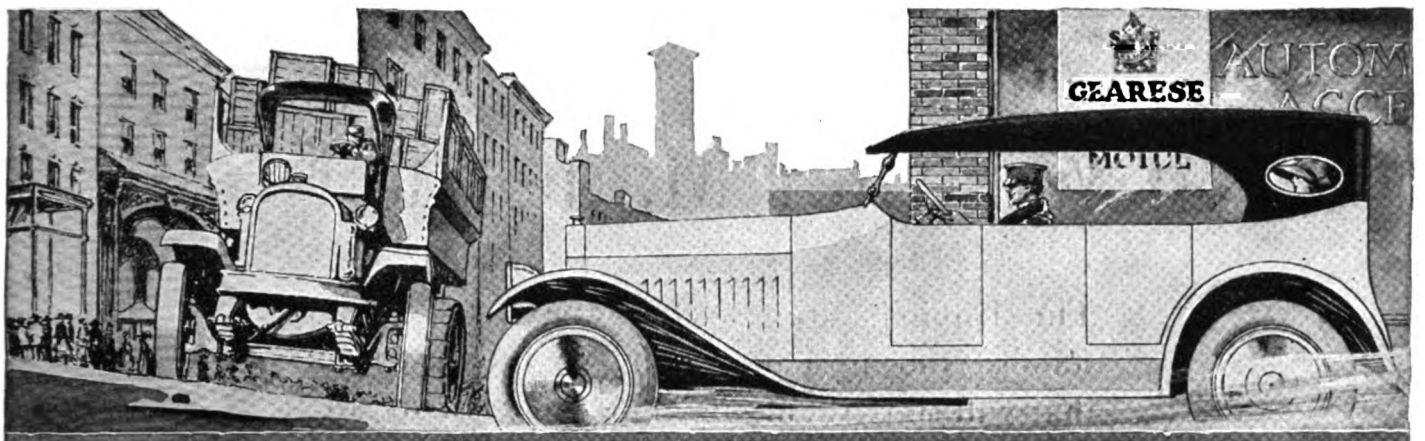
The Bailey Differential does all the things we claim for it—and more. Try one on your testing car and prove its merits for yourself—no change of housing or bearing layout required.

Licensed under the patent of the Bailey Non-Stall Differential Corporation, Chicago, Ill.

NPRH NEW PROCESS GEAR CORPORATION NPRH
SYRACUSE, N.Y

When writing advertisers please mention Motor World—It identifies you

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Keep your Car Fit

A silent, smooth running car is a matter of personal pleasure in an automobile — of personal profit and patriotic duty in a motor truck.

No grinding in gearcase when shifting gears—no "musical" noises in differential when running in first, second or high speeds—are the results of correct gear lubrication.

GEARESE

The Correct Transmission and Differential Lubricant for Motor Cars and Trucks

Correct gear lubrication reduces wear and friction. In a new car it keeps the gears from getting old and noisy—postpones the second-hand period. It makes the old car run better and longer.

Gearese is a product of the Swan & Finch Engineering Department, whose experience with correct grease and oil applications dates back to 1853. Gearese is a scientific gear lubricant—follows the gears continuously—leaves no spots where metal can rub against metal. Lubricates efficiently under all temperature conditions.

Owners of cars should insist on having gearcase and differential repacked with Gearese—the quality gear lubricant.

Every stroke of the motor on every automobile and motor truck should yield maximum motive power.

MOTUL

Quality Motor Car, Truck and Tractor Motor Oil

In Motul has been produced the correct motor oil for every motor car, truck and tractor—varying densities to suit each individual need. Motul has made it possible to minimize the amount of carbon residue and to get full fuel power. Write the Swan & Finch Engineering Department for information regarding the correct density of Motul for your particular make of automobile or truck.

SWAN & FINCH AND COMPANY
NEW YORK
Quality Oils and Greases Since 1853

To select accessory dealers and garages, an opportunity is open to make a permanent, profitable connection with the Swan & Finch Company for heavily advertised quality automobile lubricants. Full particulars on request.

Specialists:

GEARESE
A correct lubricant for motor car transmissions and differentials. Reduces friction, reduces wear. Follows the gears continuously, leaving no spots where metal can touch metal. Unaffected by temperature changes. Insures a silent, smooth-running car.

MOTUL
A quality motor oil, produced in a variety of densities for every motor need — from heavy trucks and tractors to the more delicate requirements of fine high speed multi-cylinder motor cars.

AERUL
A practical quality oil for aeroplane motors. The correct viscosity combined with proper cold test values gives a perfect seal plus maximum horse power with maximum safety.

CUPESE
The Swan & Finch "hallmark" name for a complete line of quality cup greases. Produced by the original manufacturers of mineral oil grease as the highest quality machinery protective made. The Acalorice process gives special heat resisting qualities.

SLO-FLO
A slow-flowing, high quality, economical lubricant, especially adapted to high speed machinery. Its clinging qualities prevent wasteful dripping and spattering while giving maximum lubrication and large economies over ordinary oils. It will not stiffen like ordinary greases and yet will function properly under excessive heat conditions.

ASBESTESE
An asbestos wool-mixed grease combination for correct car journal lubrication. An improvement on oil-soaked waste, where oil drips and necessitates frequent re-packing. Asbestese will lubricate efficiently without re-packing for from four to eight months—under all conditions and will stand up at 30 deg. below and 300 deg. above zero.

MARINUL
A world-known special oil, produced to meet excessive stresses of marine service.

CORUL
A combination of special oils that meets the 11 requirements of perfect core-making for malleable and grey iron castings. Corul is made to meet the requirements of the most exacting job and yet is economical enough to justify its use for all classes of work.

Also Textul, Talese, Tractul

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Cold Weather Made Profitable

The Runners are on the tape—the Starter stands Gun in hand ready to fire the Shot that will start them off—The Contestants are:

Winter Overhead and Demoralized Organization

vs.

Winter Profits and Organization Intact

WHO ARE YOU, MR. DEALER, BETTING ON?

Training will show in the outcome of the race—Spirit and Stamina will assert themselves. Preparedness will be an astonishing factor.

There is a race of this kind to be run this winter in every Garage business. The National Association of Automobile Accessory Jobbers are pledged to assist every dealer "In Making Winter Business Profitable"—The Jobber's Salesman has a list of items and a store of new ideas for you of how to get business. He has a list of Window Displays and Advertising Helps, which if used will materially assist.

Ask your Jobber and his Salesman to help you Make Cold Weather Profitable.

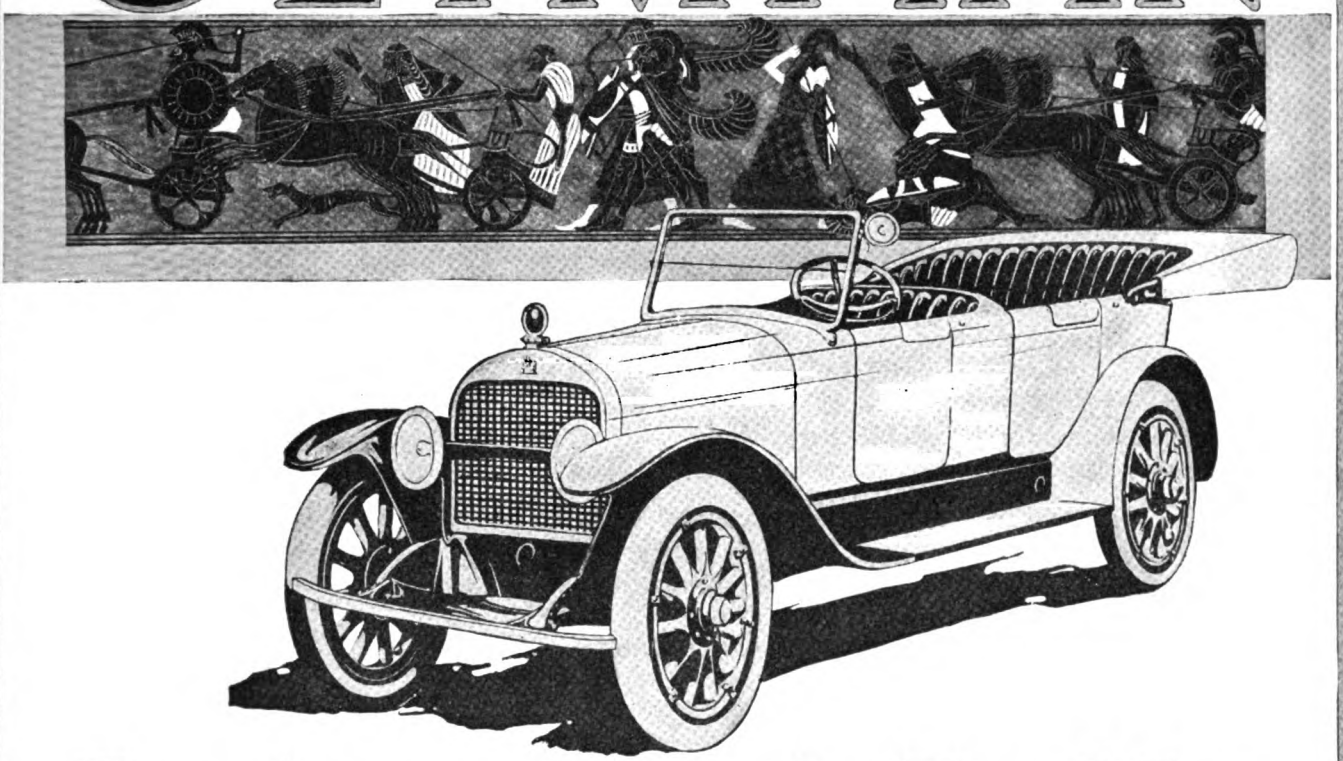


National Association of Automobile Accessory Jobbers

City Hall Square Building Chicago, Ill.

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OLYMPIAN



Dealers – This is For You

We want high grade Olympian dealers in every city and town in the United States. And ours is exactly the kind of a proposition to attract the kind of dealers we want. Listen—

The Olympian is a four cylinder car.

It has beauty, finish, speed, power, endurance, equipment—everything a car should have. It is built in one of the finest factories in Michigan. It is backed by a wide-awake, progressive organization with brains, experience, and plenty of good, hard cash.

We are now building 60 Olympian cars a week—*and selling many more.*

And remember—we are just getting started—just whipping our facilities and our organization into shape for the big drive that will put Olympian right up with the leaders.

Good dealers should make money—*big money*—by selling Olympian cars.

We pay a discount as high—if not higher—than that paid by any other manufacturer of cars in the Olympian class.

Our unique system enables us to furnish an unusually large number of sales prospects to our dealers.

The Olympian has won immediate popularity wherever introduced. It has handsome, distinctive double cowl lines and a hand painted finish that preserves its original lustre the lifetime of the car.

Mechanically, the Olympian meets your highest ideals—114 inch wheel base, cantilever rear springs, full floating rear axle, vacuum gasoline system and factory equipment that includes a spotlight, a bumper, a motometer, an ignition lock, an extra rim and an extra tire.

Also, we give Olympian owners choice of wide variety of colors.

The Olympian motor was designed for us by A. P. Brush, one of the most progressive and best known engineers in the automobile industry. It is smooth running and quiet and possesses a degree of flexibility seldom found in any but multi-cylinder cars. It consistently gives 18 miles on a gallon of gas.

Think of such selling points in a car for $965.

They are big vital points—important advantages that no car buyer can overlook. And that's just what dealers want—and must have.

We have already contracted with a number of successful dealers—leaders in their respective territories. Their demands for Olympian cars are pushing up our production by jumps. But our plans call for even faster growth. So we must have more dealers.

$965

f. o. b. factory

The Olympian is the kind of a car you'd be proud to sell. The Company is the kind you want to tie to.

Write or wire us today. Let us tell you our proposition and our plans.

We advise immediate action.

OLYMPIAN MOTORS COMPANY, PONTIAC, MICHIGAN

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Quick Selling Sensation of the Year
The Briscoe Light Delivery Car

Ever-growing demand for the Briscoe light delivery car is proved by ever-growing volume of sales reported by Briscoe dealers all over the country. It's proved the sensation of the year — smashed all quick-sales records.

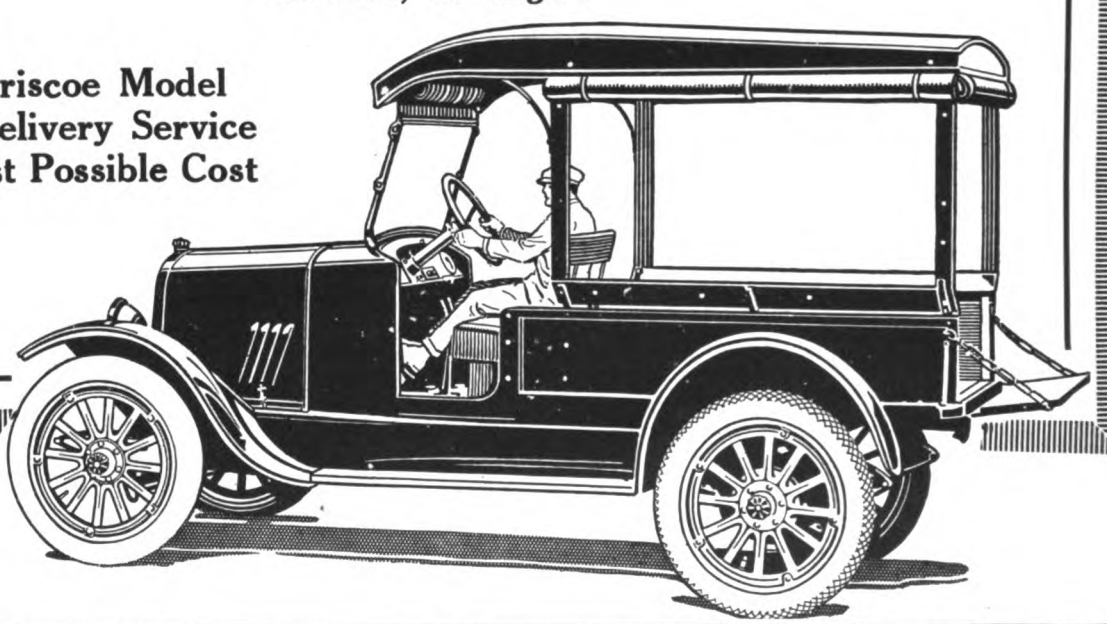
Briscoe dealers can sell **real** delivery car service at $725. Every "prospect" knows the world famous Half-Million Dollar Motor — and they all know Briscoe extras and Briscoe quality, Briscoe built in the ten great Briscoe factories at Jackson, Mich. No other car at anywhere near the price can match this Briscoe wonder.

And so it is with every model—the closed delivery car at $750; the 5-passenger touring car; the 4-passenger club roadster; the 2-passenger runabout—each at $725—greatest values the dealer can offer.

Write today for the new Briscoe offer to dealers in "open" territory

Briscoe Motor Corporation
Dept. 115
Jackson, Michigan

This Briscoe Model Offers Delivery Service at Lowest Possible Cost



BRISCOE $725
THE CAR WITH THE HALF-MILLION DOLLAR MOTOR

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Why Every Garage Needs a Dyneto Light-and-Power Plant

ELECTRIC light for your garage—power for your air-pump—juice for storage batteries—profit in selling plants to farmers.

In addition to making its own strong, steady electric light, a Dyneto Plant will operate your air-pump and charge automobile storage batteries at less cost than central power-service. Garages in small towns and outlying districts find Dyneto Plants as necessary as customers.

Here's a neat, compact little giant, made and backed by a concern with more than twenty-six years' electrical experience. The engine gives you working-power at the same time it is charging batteries for light.

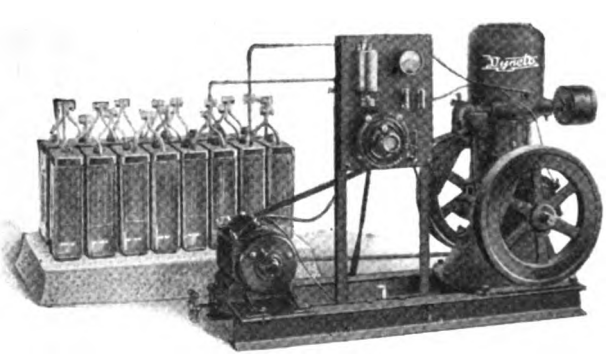
Throw a switch and—presto! A flood of pure, non-flickering electric light makes the whole garage as light as day. You can have a trouble-light that is perfectly safe with which to nose around leaky gasoline tanks or slobbering carbureters.

It has the same tested and proved worth as Dyneto Starting and Lighting Systems, used exclusively on the Franklin and other good cars.

Dyneto plants are furnished in three sizes, with or without engine—gas, gasoline or kerosene as preferred.

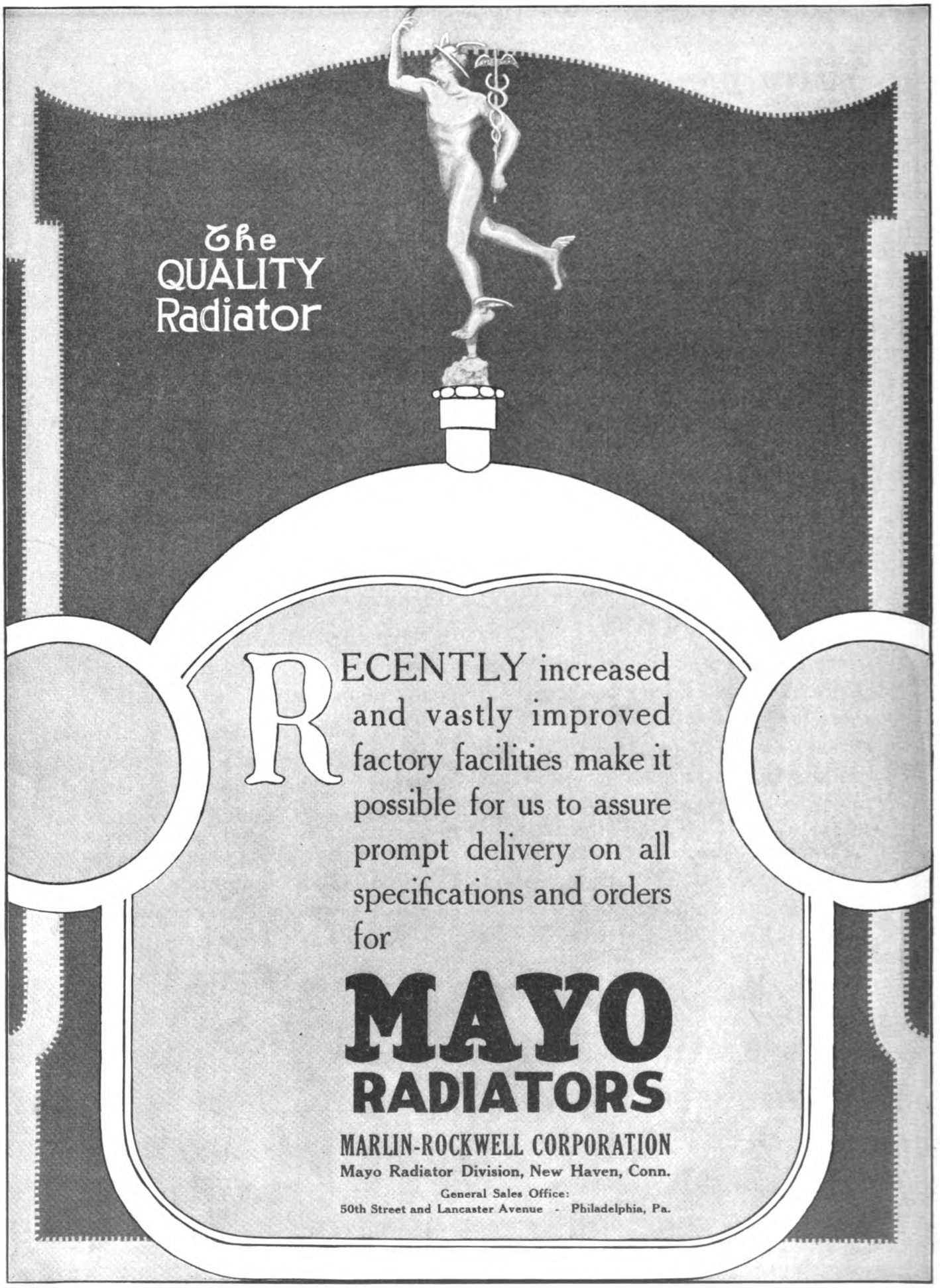
Many garagemen are selling Dyneto Light and Power Plants to farmers and owners of country homes. There's a chance here to make splendid profits.

Ask us for a proposition to represent Dyneto in your community. Write for catalog, prices and complete information today—no obligation.



DYNETO ELECTRIC CORPORATION, Syracuse, N. Y.

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PERFECTED VALVE-IN-HEAD MOTOR

THE value of the Nash franchise is well evidenced by the enthusiasm accorded the announcement of the perfected valve-in-head Nash Six by the buying public.

Five-passenger Touring Car $1295
Four-passenger Roadster - 1295
Sedan - - - - - 1985
Nash Model 671 (Seven-passenger Touring Car) 1465

F. O. B. Kenosha

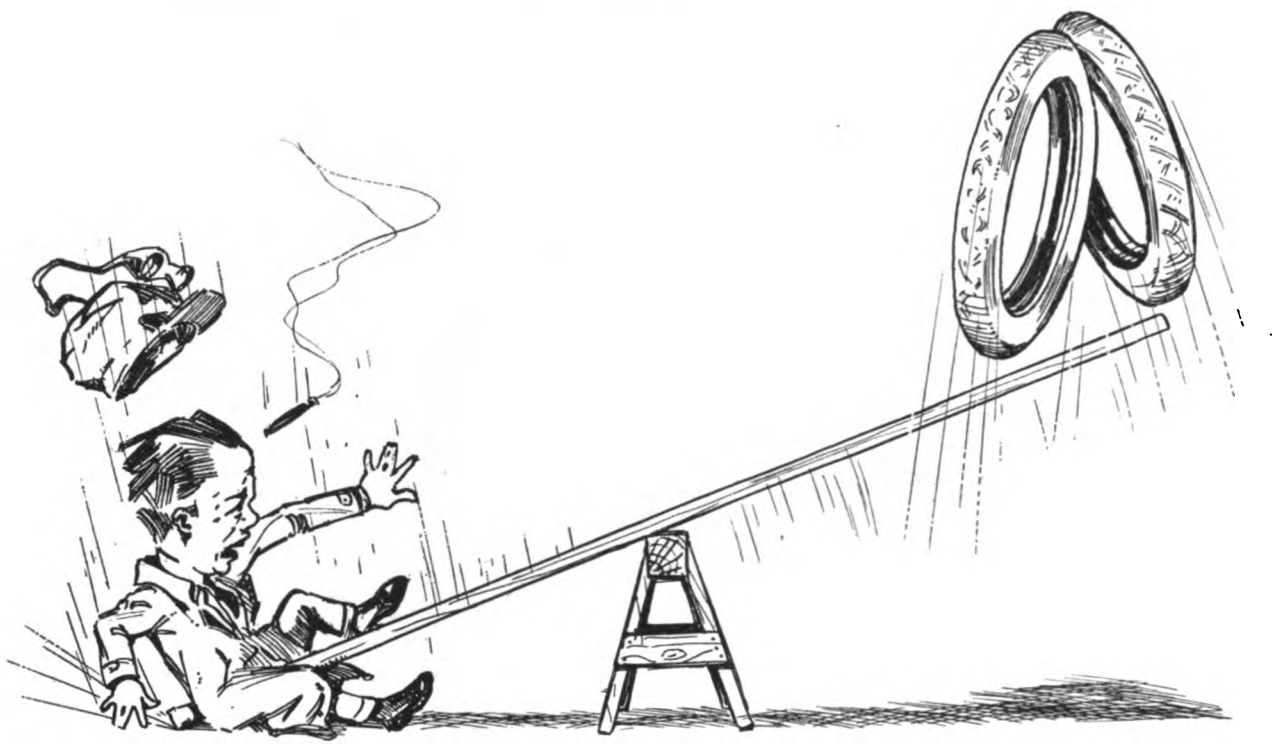
The Nash Motors Co., Kenosha, Wis.

Manufacturers of Passenger Cars and Trucks, Including the Famous Nash Quad.

NASH MOTORS

VALUE CARS AT VOLUME PRICES

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Tires Are Going Up

Already some of the larger producers have announced price advance in all sizes and styles of tires.

It is indicated that the advance will be general. Most all of the companies will announce their new price schedules within the next week or ten days.

The Tire Rate Book (September issue) will go to press just as soon as the various price changes are available. The service will be complete and up to the minute.

The September issue of The Tire Rate Book will be a volume of 260 pages, comprising 130 tire and tube lists with prices. It will also include the most comprehensive list of tire sizes and rim styles (with makers' names) ever printed.

If you are interested in the sale of tires you need the September issue of The Tire Rate Book. It is the standard price book and guide of the tire industry and trade.

THE TIRE RATE BOOK
(SEPTEMBER ISSUE)

The Tire Rate Book is published three times each year—January, May and September. Yearly subscription, fifty cents. Single copy, twenty-five cents. Use the coupon.

M.W. 9-12

THE CLASS JOURNAL CO.,
239 W. 39th St., New York City.

Enclosed find fifty cents for one year's subscription to The Tire Rate Book. Start with the September, 1917, issue if the edition is not exhausted.

Name .....

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If more than one subscription is desired, send fifty cents for each.

The Tire Rate Book

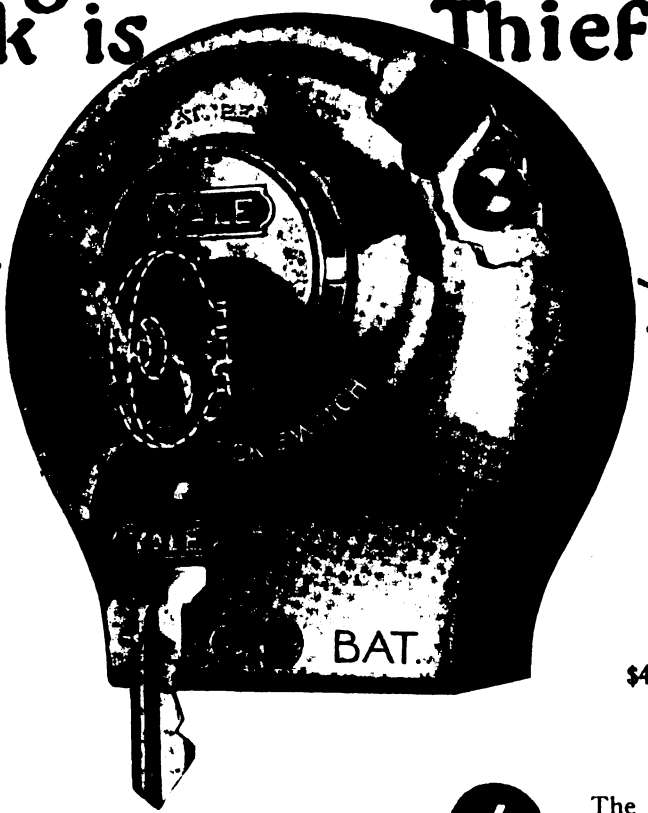
Published by

The Class Journal Company

239 W. 39th Street, New York City

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5 Big Reasons Why This Lock is Thief Proof



FOR FORDS

Price
$3.50

$4.50 in Canada

1. The lock used is the famous Yale lock.

2. The switchlock housing is made of a special ductile metal, which cannot be split, broken or cracked.

3. The screws by which the switchlock is attached cannot be removed, because of the GOODRICH patented shutter construction.

4. The switchlock housing is designed to fit so snugly that it is impossible to pry it loose.

4. The same turn of the Yale key that shuts off your ignition also locks your car and safeguards it against theft.

For Sale by All Good Dealers and Jobbers

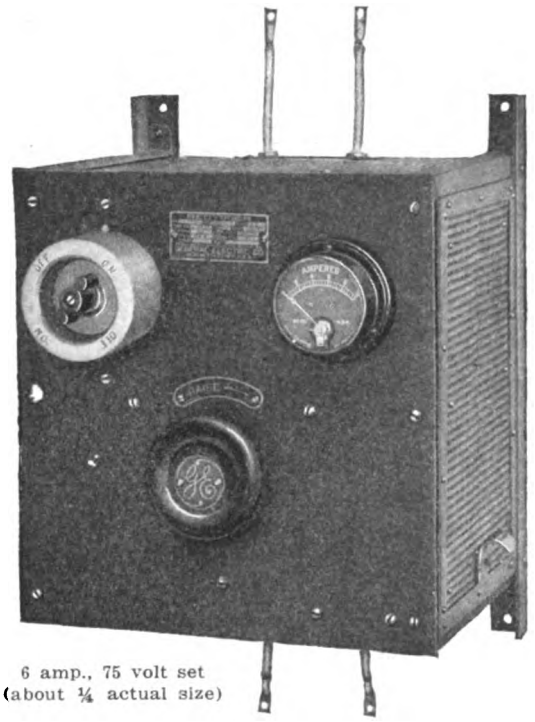
DEALERS—Help protect your Ford customers against theft. Sell them a completely dependable switch-lock, of established merit and reputation. An attractive demonstrating display, printed in five colors, suitable for counter or window, free with every order for a dozen locks. It attracts customers and makes sales easy. Order from your nearest jobber or direct.

GOODRICH-LENHART MANUFACTURING COMPANY
418 Widener Bldg. Philadelphia, Pa.
Factory: Hamburg, Penna.

Goodrich
LOCKSWITCH
WITH YALE LOCK

INSURES REAL PROTECTION

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6 amp., 75 volt set
(about ¼ actual size)

Why not get a real profit out of your battery charging?

Reduced cost means greater profits. Efficient battery charging equipment will turn an undesirable class of business into a profitable feature of your service station.

Tungar
RECTIFIER

will charge batteries quickly, noiselessly and economically. Many users report a saving of from 25% to 50% in their bills for current. The outfit is practically fool-proof and its upkeep cost is small. The 6 amp. 75 volt set will charge up to thirty cells of storage battery from alternating current. As high as 200 batteries a month have been taken care of by one of these rectifiers in a Western garage.

Ask our nearest office for booklet B-3412

GENERAL ELECTRIC COMPANY, Schenectady, N. Y. 7436

L P H C O HALLADAY BUMPERS

Dealers and Jobbers Preparing Catalogs

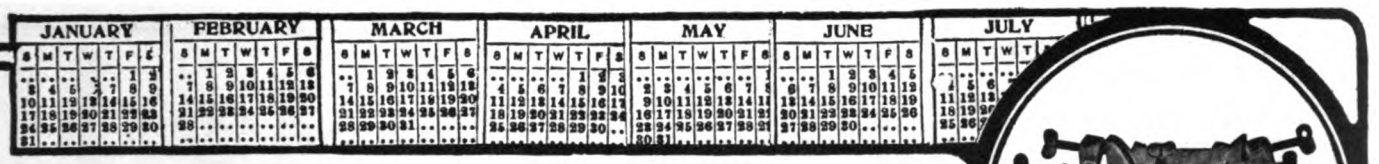
Don't forget the Halladay Line.
Quality proven by thousands of users everywhere.
Sales made easy by national advertising.
Attractive illustrations and every assistance for displaying in your catalog.
Distributed to the trade thru recognized jobbers only.

L. P. HALLADAY Company.

STREATOR, ILLINOIS

DISTRIBUTORS: Asch & Co., 16-24 W. 61st St., New York City; E. L. Thompson Co., 817 Boylston St., Boston, Mass.; Gray-Heath Co., 1440 Michigan Ave., Chicago, Ill.; Sanford Brothers, Chattanooga, Tenn., Southern Distributors; Hughson & Merton, Inc., San Francisco, Los Angeles, Portland and Seattle, Pacific Coast Distributors.

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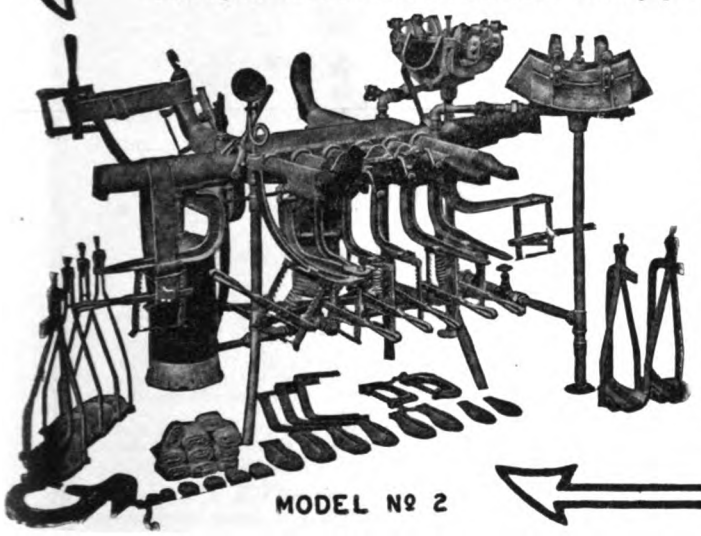
AN ALL YEAR VULCANIZING BUSINESS

The ARTHUR VULCANIZER has advanced vulcanizing from a mere one-season business to an ALL YEAR BUSINESS.

It secures repair work during even the months that were formerly the dull season.

No repair man can afford to close his shop part of the year.





THE ARTHUR MODEL No. 2 FOOTWEAR & TIRE VULCANIZER

is the outfit that has opened the way to success. It handles all kinds of repairs to rubber foot wear and repairs to inner tubes and casings.

Write for full information and catalogue.

THE ARTHUR VULCANIZING MACHINE COMPANY

Griswold St. Warren, Ohio





CURTIS AIR FREE FROM OIL

The Curtis Compressor is the only one designed to prevent flooding the cylinder with more oil than it needs for lubrication. This, because of our controlled-splash oiling system. No excess oil is forced into the air line. **Oil ruins tires**—air free from oil means fewer blowouts and increased mileage all around for your customers, with less tire adjustments to you. Make your place the most popular one in town. An easy and inexpensive way, is to install a Curtis Compressor. The customer assumes if you have the best free air service, you will have the best service in all departments.

Costs No More Than Ordinary Compressors—But Note The Difference

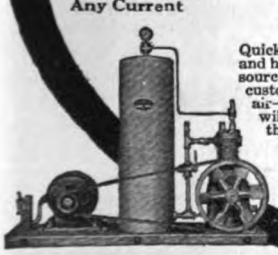
Live garages and service stations are using Curtis Air Compressors. Motorists expect free air service. Why not give them the best and win over new customers by supplying, not only reliable air service, but **Curtis Air—Free From Oil.** A poor air system which shoots oil into the tires, or which is unreliable, drives customers away. Thousands of Curtis Outfits are rendering daily, effective, efficient service all over the country. Your Curtis Compressor can further pay for itself by supplying air for air hoists, painting, cleaning, vulcanizing, blowing dust and drillings from tools, and many other things. Curtis Compressors are backed by manufacturers who have been specialists in this line for twenty-five years.



10 Combinations of Compressor and Tank Sizes—Any Current

Five Sizes—Tight Pulley Only, or Tight and Loose Pulley

11 Combinations of Compressor and Tank Sizes—Any Current



Makes New Customers—Holds Old Ones

Quickly pays for itself in bringing in new trade and holding the old trade, for it not only is the source of a dependable supply of air when your customers want it, but it also supplies clean, cool air—free from oil. Motorists realize that oil will quickly destroy their inner tubes, and, therefore, look for a station that supplies Curtis Air—Free From Oil.

Curtis Compressors are built to meet the requirements of your business in sizes, arrangements and prices. Send coupon at once for full information and attractive prices. It will pay you to investigate our proposition. *Write us today, or ask your jobber for prices—but insist on a Curtis.*

Curtis Pneumatic Machinery Co.
1546 Kienlen Avenue St. Louis, Mo.
Hudson Terminal, New York

Curtis Pneumatic Machinery Co.
1545 Kienlen Ave. St. Louis, Mo.

Gentlemen: Please send me full details regarding Curtis Garage Air Compressor—your proposition and low prices.

Name.....

Address.....

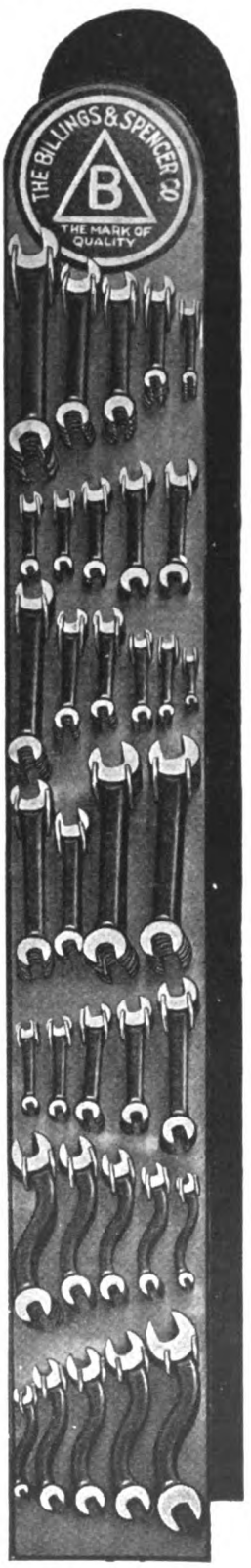
Jobber's Name.....

Address.....

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TRADE MARK

This Board Will Sell the Wrenches For You



IN less time and with less talk and trouble than if you personally picked out the wrench your customer was looking for.

Dealers the world over are using with great success Billings & Spencer Wrench Boards, more than 4,000 of which are displayed in this country alone.

First and foremost it is a convenient, practical aid to selling. It does away with the necessity of searching for the exact type required; it saves time for both yourself and your customer; it shows him what he is looking for at the first glance and it keeps your stock before your eyes.

Also the mere fact that the triangle trademark of the Billings & Spencer Company is upon each wrench and its medallion upon the board inspires confidence on the part of the purchaser and shows that you are a dealer in products of the highest character.

BY INVITATION MEMBER OF

THE BILLINGS & SPENCER CO.
HARTFORD, CONN. U.S.A.



Uncle Sam Knows the Real Answer:

NOT ENOUGH!

Save Leather for Soldiers

To make America's hide supply go as far as possible, hides are being split into five or more thin sheets; but even this saving scheme fails to meet the requirements for soldiers' shoes, harness, equipment, ship upholstery, factory needs, etc., chiefly because too much hide leather is used by the public in places where high grade leather substitutes will serve as well or better.

For instance, the leather upholstery of one average size automobile would make twenty pairs of soldiers' shoes. For years America's largest producers of automobiles have successfully used

DU PONT FABRIKOID
REG U S. PAT. OFF

MOTOR QUALITY

for upholstering their cars. Thousands of owners never even knew their cars were not upholstered in leather, because Fabrikoid looks and feels just like the finest leather and actually wears better than the coated split leather most used for upholstery of automobiles not covered with Fabrikoid.

It is true that some few high priced automobiles are still upholstered in genuine grain leather of good quality.

But the pride of possession of luxurious, expensive leather should now yield to patriotic preference for satisfactory substitutes that will divert this leather to more necessary uses.

Uncle Sam Has Set the Pace

The new U. S. motor trucks and ambulances will be upholstered in leather substitutes.

The upholstery specifications for the new Merchant Marine call for "Craftsman Quality Fabrikoid."

What Uncle Sam has found by experience and tests good enough for the Government's severe requirements should be good enough for every loyal American.

If you are a manufacturer using leather, probably part or all of your requirements can be met by some grade of Fabrikoid.

When buying an automobile prefer Fabrikoid upholstery. Help the manufacturer conserve leather by patronizing those who use good leather substitutes like Fabrikoid.

Every hide displaced by a good substitute helps supply our armies with shoes, our farms with harness and our factories with belting—it helps win the war.

Manufacturers! Write us your requirements and let us co-operate with you.

Send for samples and booklet.

Du Pont Fabrikoid Co.

Wilmington, Delaware

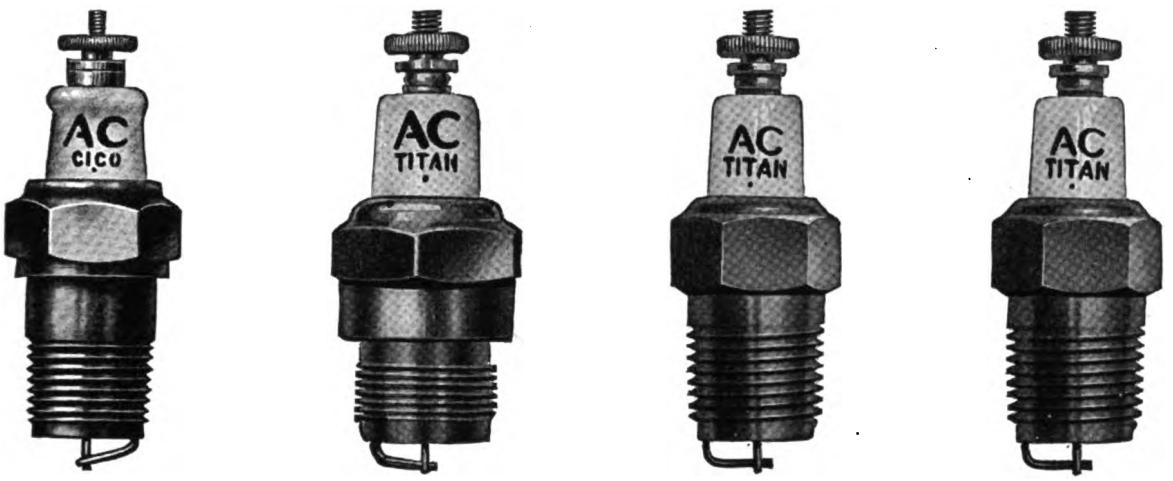
World's Largest Manufacturers of Leather Substitutes

Factories at Newburgh, N. Y., Elizabeth, N. J., Fairfield, Conn., Toronto, Ont.

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AC Spark Plugs

The Standard Spark Plug of America



Special for Ford Cars A C CICO — **⅞" Regular For Maxwells A C TITAN** — **½" Regular For Willys-Overland A C TITAN** — **½" Regular For Studebakers A C TITAN**

AC Plugs have proven to be the best under all conditions. That is why 80 manufacturers of Automobiles, Trucks, Tractors and Aeroplanes use them for regular equipment. The leading race drivers are using them. *Your* motor will not give its best performance unless equipped with AC. You will come to them in time. Why not buy a set *now* and note the improvement?

CHAMPION IGNITION COMPANY, Flint, Michigan, U. S. A.

Swift Deliveries of Havoline Orders

Havoline Oil swings into the stretch of sales supremacy. Step hard on the accelerator, and get your share of the profits in handling

HAVOLINE OIL

REG. U.S. PAT. OFF

"It makes a difference"

Get your customers in the habit of saying "Havoline" every time they need a can of oil.

Havoline advertising, plus our consistent merchandising principles, plus distributing stations everywhere to insure prompt shipments—are your guarantee of steady sales.

Indian Refining Company
Incorporated
NEW YORK
Producers and Refiners of Petroleum



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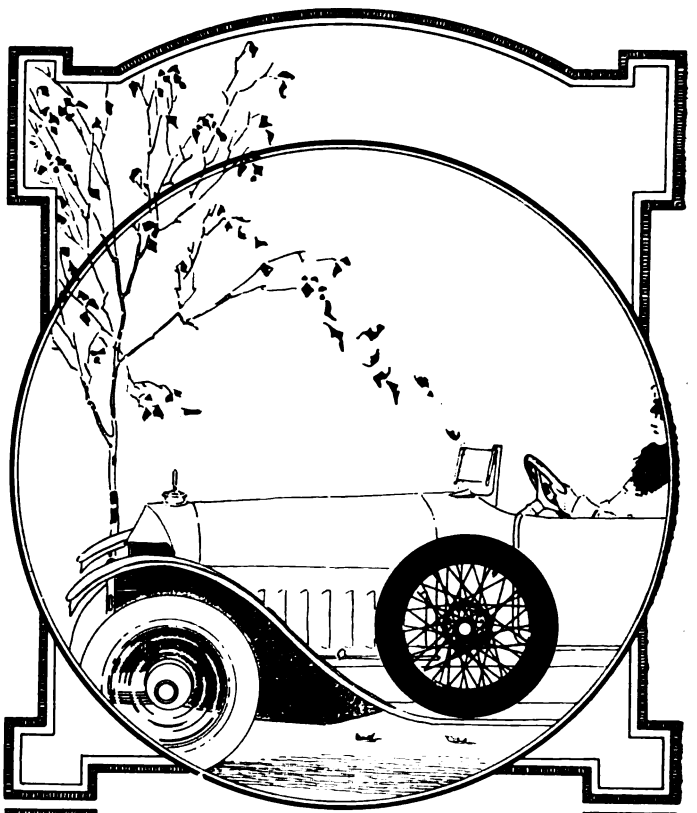
Four $1125 EMPIRE Six $1345

Here Is Motor Car Value of the Highest Kind

The Empire line appeals to the progressive dealer for he realizes the importance of embracing a money-making opportunity.

Your territory may be open. Write today for literature and particulars of our liberal selling plan.

Empire Automobile Co.
Indianapolis, Indiana
Established 1908



Saving the Spare

Your extra tires are subjected to an unusual amount of bad weather during the winter time. They will last much longer and give infinitely better service if protected by

Invincible

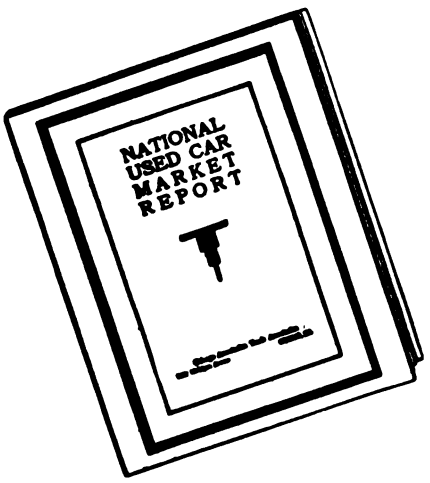
TIRE COVERS

No matter whether it be merely a spare **casing or a wire wheel; whether it be a** Ford tire or one from the heaviest limousine, we make a cover for it that fits perfectly. Our style Number 7100, for spare wire wheels, completely protects the tire—requires no straps, buckles or buttons for fastening—is easily put on or taken off. You should have our catalog describing the various styles and sizes ready for you.

The Peters & Herron Dash Company
77 S. Gift Street Columbus, Ohio

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MAKE MONEY ON YOUR USED CARS!



Description: A 189-page book, 9" x 12", issued every three months, giving the current market value of every used car of every model from 1912 to 1917 inclusive, of one hundred and thirty-two different makes of gasoline passenger cars and fourteen electric vehicles, together with complete specifications of same.

You Can Get It At a 50% Saving on 10 Days' Trial!

NATIONAL USED CAR MARKET REPORT

"The Barometer of the Used Car Market"

FOR THE PAST FOUR YEARS THE NATIONAL USED CAR MARKET REPORT HAS BEEN MAKING MONEY FOR WIDE-AWAKE DEALERS EVERYWHERE. DEALERS AND MANUFACTURERS ENDORSE IT.

It's not an experiment—It's a reality.

If you want to MAKE MONEY on Used Cars—accept this offer—

SPECIAL OFFER:

The regular subscription price to the NATIONAL USED CAR MARKET REPORT SERVICE is $24.00 per year. For a limited time we will accept subscriptions at $12.00 a year—just one-half the regular price.

Send us your check for $12.00 and get the SERVICE on ten days' approval. USE THE COUPON attaching same to your business letterhead. We will ship current edition at once. USE IT TEN DAYS! Let it make some money for you.

At the end of that time, if you're not satisfied—return it and we will refund your money.

Subscriptions will be accepted only from bona fide automobile dealers, so please identify yourself when writing.

Published Quarterly by

Chicago Automobile Trade Association
2136 Michigan Ave., Chicago

THIS COUPON WORTH $12.00

Chicago Automobile Trade Ass'n.,
2136 Michigan Ave., Chicago.

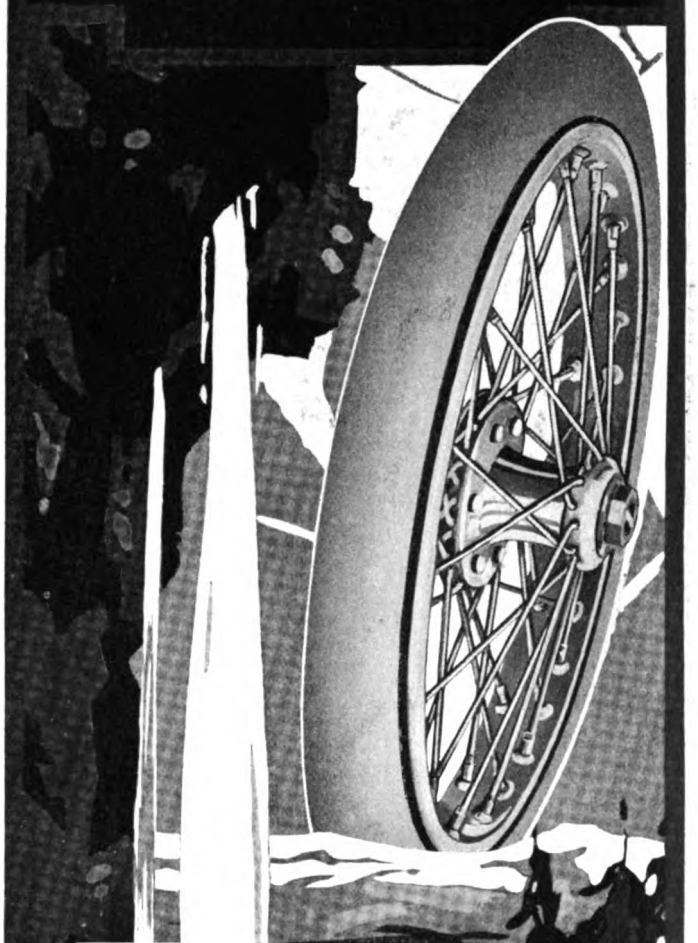
Enclosed find check, money-order or draft for $12 for which please ship current edition of National Used Car Market Report on 10 days' Money Back Trial.

Name .....

Address .....

Attach coupon to business letterhead.

DAYTON
QUICK DETACHABLE WIRE WHEELS
MADE UNDER LICENSE



For Ford Cars
Amazing Mileage

Sound construction is the real basis of Dayton Wire Wheel endurance. The triple laced spokes and remarkable resiliency, coupled with all that vast experience, vast knowledge and mechanical skill can do, make the "Dayton" the sturdiest wheel today, in addition to increasing mileage 25%.

Five wheels and four hubs make a set—can be changed easily and quickly. Color optional.

Dealers and Distributors

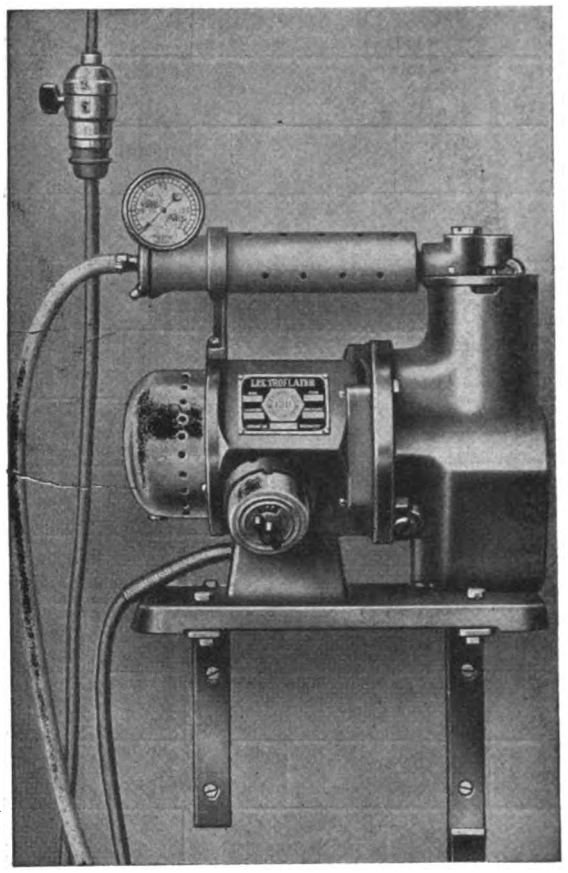
Grasp this opportunity to increase your sales, profits and the number of satisfied customers.

Deliveries NOW.

The Dayton Wire Wheel Co.
826 Miami Road, Dayton, O.

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Handy and Out of the Way



An "always on the job" electric air compressor which is quick and powerful and capable of hard continuous service and yet—on the wall entirely out of your way.

Black & Decker LECTROFLATER

Electric Air Compressor—Wall Type

For real, everyday utility this scientifically designed, finely built, compact little air compressor is without peer.

It pumps cool, clean, dry air.
There is no water to freeze in winter.
It is lubricated with grease, not oil.
It will inflate a 33 x 4 tire from flat to full in 90 seconds.
It will inflate ten tires at a cost of one cent for electricity.
The Wall Type Lectroflater is perfectly balanced and easy running and all of its working parts are enclosed in a single housing. It operates from any electric light socket and uses either direct or alternating current.
It is fully guaranteed.

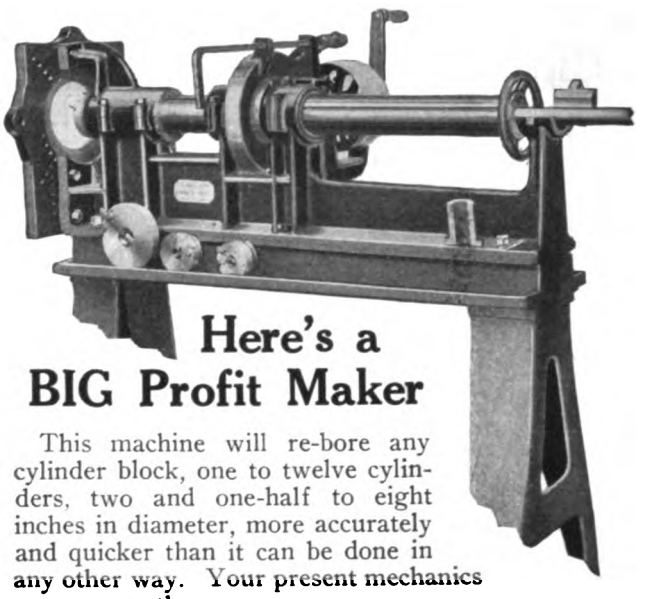
BLACK & DECKER MFG. CO.
109 SOUTH STREET
BALTIMORE MARYLAND, U. S. A.

Distributors for Canada *Northern Electric Company* LIMITED Montreal



Write today for illustrated booklet, "The Friendly Touch." It contains complete information about air equipment of all kinds, sizes and prices.

Jobbers: Write for sales proposition.



Here's a BIG Profit Maker

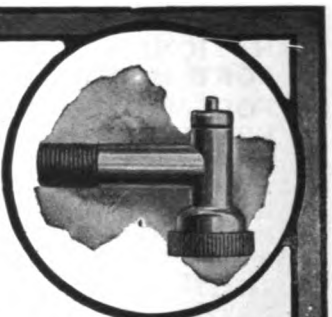
This machine will re-bore any cylinder block, one to twelve cylinders, two and one-half to eight inches in diameter, more accurately and quicker than it can be done in any other way. Your present mechanics can operate the

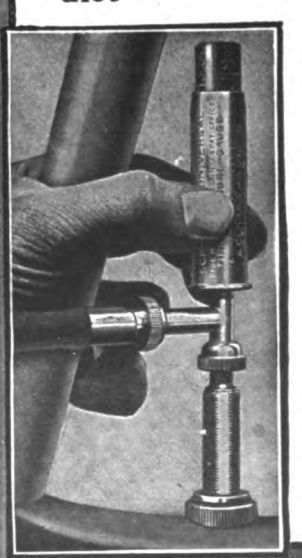
Marvel Re-Boring Machine

It will make BIG profits for you, double your repair business and turn shop losses into a handsome net profit. It is by far the most efficient, rapid, simple and accurate boring machine made. It will pay for itself quick. Write for details today.

THE MARVEL MACHINERY CO.
Minneapolis Minn.

You can't tell how much Bengal Tiger there is in a white rabbit until you put him on a meat diet





.....and you can't tell how many miles your tires can give you until you put them on a REGULATED, MEASURED, air diet. Just so many pounds pressure, no more and no less.

If you pumped up your tires every time they fell below the pressure specified by the tiremaker, they would last for the maximum distance. Don't say pumping is too much trouble. With a

SCHRADER UNIVERSAL PUMP CONNECTION

it is no trouble at all.

Ask your dealer to show you how it works.

Price Thirty-five Cents.

A. Schrader's Son, Inc.
783-803 Atlantic Ave.
Brooklyn, N. Y.

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Kester Crystal-Core Wire Solder

is the most practical solder for automobile repair work. The solder is a hollow wire filled with an acid-flux (see cut), which flows as solder is used. Cheaper to use than solid wire or bar solder, as it eliminates preparing, hunting for, or applying the acid-flux.



Cleaner, Neater, Quicker

For spark plug and battery terminals, electric light connections, cracked fenders, gasoline pipe and tank joints, radiator leaks, speedometer flexible shaft, and the general garage uses.

Sold in one pound coils and on one, five and ten pound spools.

Ask your jobber to supply you.

CHICAGO SOLDER CO.
CHICAGO ILLINOIS

FREE TOURING MAPS



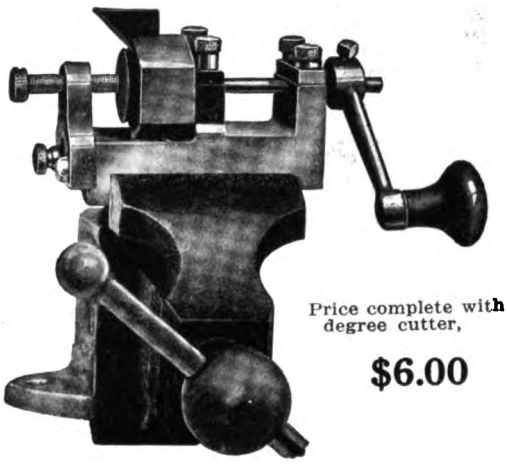
CHECK MAPS DESIRED
AND MAIL TO
GULF REFINING COMPANY
DEPT. 1879 PITTSBURGH, PA.

- ☐ Middle West
- ☐ Transcontinental
- ☐ New England
- ☐ New Jersey
- ☐ Pittsburgh-Buffalo
- ☐ Southern States
- ☐ Pennsylvania
- ☐ Texas

NAME .....

CITY ..... STATE .....

THE SIOUX WAY



Price complete with 45 degree cutter,

$6.00

Gives You More Profit From Jobs You Have Every Day

Cut down the cost on valve grinding and make a big profit on these jobs that are coming in every day. The greenest boy in the shop can do a perfect job in 1/20 the time required by the old methods, if you buy him

The Sioux Refacing Tool

Removes all carbon pits and other irregularities —makes the valve face at an accurate angle and perfectly centered. A very few minutes' grinding finishes the job. A real time-saver and profit-maker. Pays for itself in a very short time. Its perfect work makes satisfied customers.

Regularly equipped with a carbon cutter, but a high speed tungsten steel cutter can be secured for work with hard tungsten valves.

Other Sioux Time-Savers

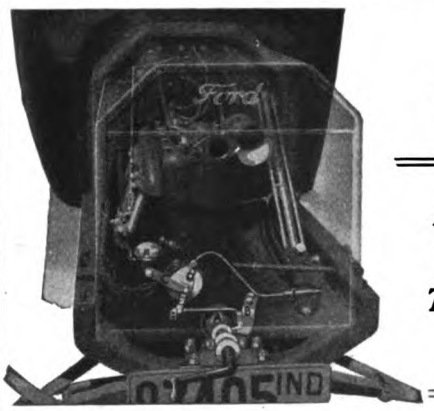
The *Sioux Valve Seat Reamer* and the *Sioux Valve Grinder* complete the Sioux Trio—the most efficient Valve Grinding Outfit on the market. Live dealers carry them in all sizes and angles. Investigate today.

Liberal Discount to Dealers

MANUFACTURED BY
ALBERTSON & COMPANY
SIOUX CITY, IOWA

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MAKE CRANKING SAFE



FOR

$3.50

ATTACH BILL TO YOUR FORD

Bill Automatic Spark Retarder

The Bill Automatic Spark Retarder is just like a friend who knows all about ignition, sitting at your wheel while you crank.

Without any attention whatever from you he retards the spark to a point of perfect safety when you engage the crank, and as soon as the engine starts he advances the spark to the running position.

This combination service action saves you from injury from a kick-back, and prevents your motor from stopping when you don't run quickly back to the wheel to advance the spark.

Put Bill on Your Ford Today

DEALERS: WRITE FOR TERMS AND TERRITORY

Bill Mfg. Co. La Porte, Ind.

HIGHLAND BODIES

The Dealer's Greatest Sales-Help

Fitting the right body to a truck is often the deciding factor in closing a sale.

The truck manufacturer who is not giving to his dealers the benefit of Highland experience and skill in body building is depriving them of valuable sales-assistance. We have been building commercial bodies for 25 years.

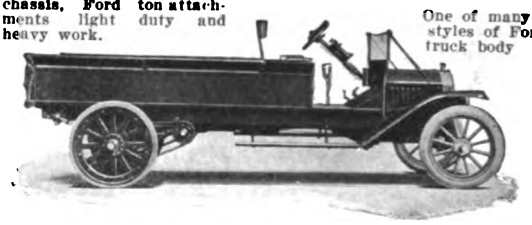
The leading manufacturers are glad to consult with our Engineering staff, for we have accumulated a fund of data on all types of body that is remarkably complete.

We invite correspondence from maker, dealer or user.

Highland Body Mfg. Company

1021 Elmwood Place Cincinnati, Ohio

Note: We also make a complete line of standard bodies for the regular Ford chassis, Ford ton attachments light duty and heavy work.



One of many styles of Ford truck body

WOODWORTH

Easyon Chains

are exactly what the average motorist needs and can afford. Dealers are selling them fast, at a good profit. Write us.



Spring Cover and Lubricator

Here is a simple, inexpensive cover for your springs that cuts the rust, preserves the resilience, and protects from dust and dampness.

Made of good leather, lined with oil-soaked felt wicking, they last a year without re-oiling.

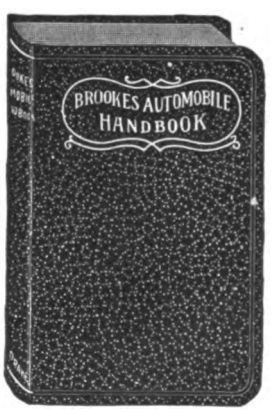


They are becoming more and more popular and are profitable and satisfactory from the Dealer's point of view. Write us.

WOODWORTH MFG. CORP.

Niagara Falls New York

The Most Practical Book on the Automobile Ever Published



Brookes' Automobile Handbook

(NEW EDITION)

For the owner, repairman, garages, automobile designers and dealers. A complete encyclopedia including every subject in relation to the automobile.

An idea of the extent of some of the main divisions may be formed from an inspection of Starting and Lighting (91 pages), Carburetor Instructions (52 pages), Transmission Systems (38 pages), Ignition (126 pages), and Engines (46 pages).

715 pages. 335 Illustrations and 12 Tables. Printed on Plate Paper.

Handsomely bound in leather, stamped in gold, red edges, round corners, pocket size.

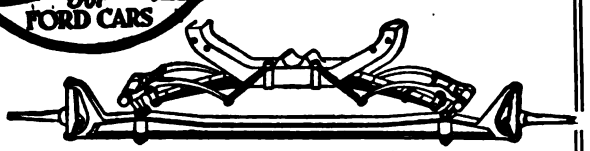
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U. P. C. Book Co., 239 W. 39th St., N.Y.

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The Original Double-Arm SHOCK ABSORBER
W & C
For FORD CARS

$10 Per Set of 4



W & C

The Original Double-Arm Shock Absorber Makes As Much Difference As Pneumatic Tires on Fords

Installing a set of W & C double-Arm Shock Absorbers is as good as substituting pneumatics for a set of hard rubber tires. Their resiliency reacts to the immediate advantage of both passengers and mechanism.

They are as desirable on Ford cars as air-filled tires. You *know* how desirable *that* is.

Ask your dealer to-day—and say "W & C."

Some territory still open that needs live dealers. WRITE.

P. H. WEBBER COMPANY
HOOPESTON, ILLINOIS

When Cars Run Smoothly

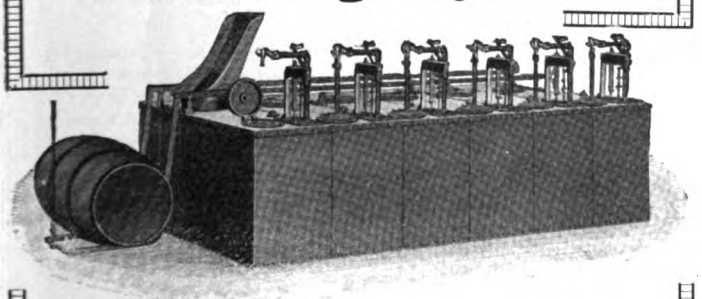


It is the result of proper care and attention to the grade and condition of the lubricating oils with which they are supplied.

To reduce friction, oils must be protected from dirt and grit; stored so that they retain their full value and lubricating qualities.

Be sure of the oils you feed your car—get your supply from the

BOWSER ESTABLISHED 1885
Oil Storage System



S. F. BOWSER & CO., Inc.
Sales Offices in All Centers FT. WAYNE, IND., U. S. A. Representatives Everywhere

Steer Warms For Winter Driving



BUSINESS BOOSTERS

Dealers throughout the cold-weather territory have found Steer Warms to be great business boosters. They make winter driving comfortable; make more driving and increase the dealers' sales of supplies and accessories. They are easy to sell and sure to give satisfaction. Whatever else your customers may kick about, they'll give you nothing but praise for Steer Warms.

Keep the Hands Warm In Coldest Weather

On the longest drive, in the coldest weather Steer Warms keep the hands warm; and, besides the comfort of Steer Warms, they ward off "bad colds"; make driving safer by keeping the fingers limber and the grip firmer, and they save money on gloves.

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Steer Warms are nationally advertised and up-to-date autoists are on the lookout for them. Put them in your stock and let people know where to find them. They'll draw trade and help you make sales of other things as well.

Good Profits

There's a good profit and "big money" in Steer Warms: the retail prices are small and you can sell lots of them.

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Steer Warms are made of the best material and are absolutely guaranteed in every way; guaranteed against burn-out for five years; money refunded if they don't do all we claim for them.

Get the Genuine

Steer Warms are the only hand-warmers in which the heating element is protected, thus insuring uniform heat and unbroken service. Don't experiment with inferior infringements; get the genuine Steer Warms.

We Help You Sell

We furnish to dealers advertising aids and practical sales suggestions. Write for full information and be ready to order in ample time for your winter business.

Interstate Electric Co.
846 Perdido St. New Orleans

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The BUFFINGTON Folding Steel Auto Chair

The trade knows these Chairs to be the utmost in durability, comfort and design. One move folds them into a three inch space. Made in four sizes 12", 15", 17" and 18" high, seats 10", 11" and 14" square. Upholstered in Imitation Black Leather. Regular finish on Steel Black Japan Baked.

We also make Upholstered and Carpet Stools from 7½" to 17" in height. Seats 9½" and 11". You will not make any mistake in handling the Buffington goods for we always are willing to stand by them.

Write for circulars and prices on our line.

C. A. BUFFINGTON & CO., Berkshire, N. Y.

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LONG HORN
KIMBALL AUTO JACK
G-P MUFFLER CUT-OUT
CASSCO ENGINE-DRIVEN TIRE PUMP
TENION RINGS

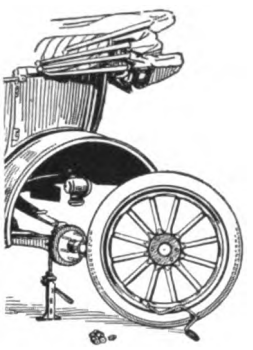
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Write at once for complete details and Special Dealer's Proposition



Simplicity Wheel Co.
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Gives More Power Greater Speed

IMP CARBON CHASER

Better Ignition and Uniform Combustion

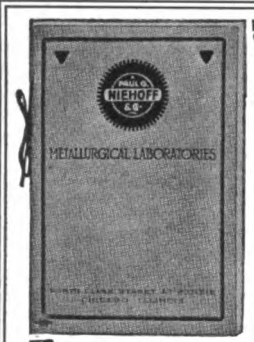
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SAVES 25% GASOLINE ELIMINATES CARBON

One IMP Tablet in every FIVE Gallons of Gasoline will do the work. Retail price east of Rockies 75c. can of 20 tablets. Exceptional discount to Jobbers and Dealers.

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Have you received your copy?

It is a *Book of Knowledge* that enables you to become an electrical expert in your automobile work. No more guessing at what you need. It is a complete illustrated catalog of contacts, starter and generator brushes. *Free* to every repair man. This is a line that will build up a splendid business. Ask about our Cash Register of contact parts proposition. Write today.

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Metallurgical Laboratories Clark St., at Kinzie, CHICAGO, ILL.

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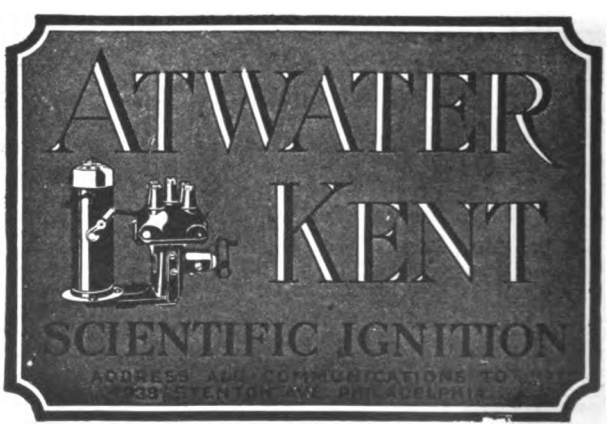
A Fabric for Every Purpose for Open, Closed, and Convertible Bodies

Silent — powerful— alert — comfortable —that's the

LIBERTY

whose road dominance is proved daily by thousands of motorists. Prove it to yourself. $1350.

Liberty Motor Car Co.
Detroit



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Jackson Rim Company
Jackson, Michigan

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Plain Clincher and All Styles of Q. D. Demountables, Straight Side or Clincher

Controlling Perlman Demountable Rim Patents

CAREFULLY CONSIDER

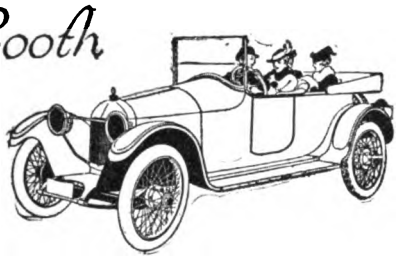


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Service Stations in Every State

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In both the four-cylinder and the eight-cylinder models, Scripps-Booth combines the height of motor luxury with light weight, in a way never before achieved. The resulting comfort and economy have given Scripps-Booth a unique position with a highly desirable clientèle.

Four-cylinder Roadster.....$1250
Eight-cylinder Four-Pass..... 1425

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Detroit, Mich.

BAR OUT ALL BOTHER
AND BREAKAGE

The **most dependable** defense ever devised against danger and damage is provided in

HIGGINS QUALITY SPRINGS—For Replacement

Guaranteed alike at all points. Made without center bolt or hump. Possess resiliency that protects car. Sturdy strength that gives longest wear. Safest to order for own use. Most certain to satisfy customers.
Splendid discounts to dealers. Immense demand. Write for discounts and catalog 1917.
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NO BOLT-NO HOLE-NO HUMP-NO JOLT

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THE EISEMANN MAGNETO CO.
Sales and General Offices: 32-33rd St., Brooklyn, N. Y.

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Powerful
Durable
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Standard
Equipment for
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POVASCO PRODUCTS

Indestructibility, Beauty, Tilting and Hand Warming are the Povasco features that place it beyond any other Steering Wheel. Our proposition on wheels and radiator caps is interesting to distributors and manufacturers.

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Poughkeepsie, New York



Plain Povasco | Tilting & Warm Hands | Radiator Caps



ZENITH CARBURETOR

KNOWN the world over as the *zenith* of carburetor efficiency. A long list of American builders of cars, trucks and aeroplanes believe this simple, plain tube device to be the best insurance for permanent carburetor satisfaction.

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WHAT IS YOUR UNDERSTANDING OF FLEXIBILITY?

Flexibility means (according to the advertisements) the ability of a car to slip from low speed into high, or from high into low, with extreme smoothness and celerity.

Flexibility—approached in other cars—is actually attained in the Owen Magnetic.



BAKER R & L COMPANY
Cleveland, Ohio
Manufacturers of
OWEN MAGNETIC MOTOR CARS

Salesrooms— New York Boston Philadelphia Chicago

Quality in Motor Trucks

It has been our endeavor to create a commercial vehicle that would excel first of all in the quality of the material used, and, second, in the economy of its operation.

Our reputation for producing the most lasting truck is recognized by our many users.

We offer for your convenience the following sizes:

1½-ton 3½-ton
2-ton 5-ton
7-ton

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90,000 SPRINGS IN STOCK—FOR EVERY CAR

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Write FOR CATALOG AND DISCOUNTS

Display Rack Free With Order For 12 Assorted

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FOR COMFORT AND SAFETY— AND ECONOMY

Makes Every Road a Boulevard — Hartford SHOCKABSORBER

Best Jack Money Can Buy — Hartford AUTO JACK

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GLOBE TIRES

GUARANTEED 6000 MILES

REDUCE THE OPERATING COST OF YOUR CAR

Long Mileage Tires MUST Be Hand Made

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Executive Offices: 1851 Broadway, New York. Factory: Trenton, N. J.







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A *Little* Article With a *Big* Sale

HANDY HORN PUSH BUTTON AND HOLDER FOR FORDS 75c

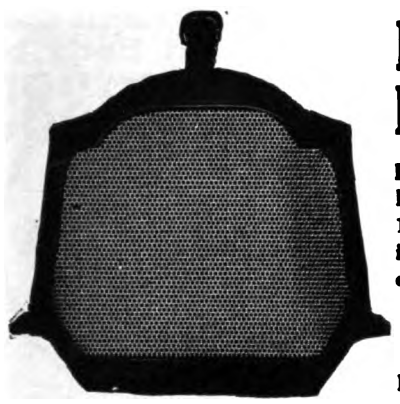
Allows mounting of Horn Push Button on top of steering column. Costs but 75c. with new button—35c. if you use your own button and Handy Bracket. Dealers—Write for discounts—this is the fastest selling Ford accessory ever put on the market.

Sole Manufacturers:

THE FRANCIS-RAND CO., Cleveland, O.

The Pullmore Front Drive TRUCK is here

Union Arcade, Pittsburg, Penna.



Fedders Radiators

Fedders quality is largely the result of 18 years' specializing in radiator production.

Fedders Manufacturing Co.
Buffalo New York

Carry a Few in Stock this Season

Next season you will do it without being told.

The need for trailers is so general that they are easy to sell. They get easier to sell every month as people get used to the trailer idea. The trailer has come to stay because it is the only logical way to solve carrying problems.

The illustration shows Model No. 41 (our smallest) one-half ton capacity. Price $85.

The Ohio Trailer Co.
58 Doan Avenue
Cleveland, Ohio



OHIO TRAILERS

MODEL 41
$85.00

Price
$7.50



Rothweiler Pump

Empties a Barrel or Drum Completely

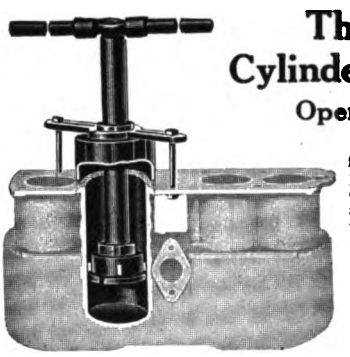
No Waste *No Drip*

Good for Oil, Gasoline, Turpentine, Light Paint, etc.

Works Easily, Quickly and Efficiently

A Great Trouble Saver

ROTHWEILER & CO.
Seattle, Wash.



The Universal Cylinder Reboring Tool

Operates on Any Car

Rebores cylinder from start to finish without slightest taper, and perfectly round. Automatic and quick in action. Takes as much as 1/16" oversize in one operation, and completed job will be a smooth finished and true to 1/1000 of an inch.

Range of Expansion, 2½" to 5 1/16". Any type motor.

Write for free illustrated literature and details.

Specify Catalog No. 4.

For Sale by Leading Jobbers

THE UNIVERSAL TOOL COMPANY, Inc., Detroit, Michigan

GOODELL-PRATT



1500 GOOD TOOLS

Write for Complete Catalog

Goodell-Pratt Company
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Toolsmiths

BEARINGS SERVICE COMPANY
Nation-wide Service on Bearings

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BETHLEHEM MOTOR TRUCKS

"Dependable Delivery"

$1245 1¼ Ton Chassis

$1285 1¼ Ton Complete with body and cab

$1775 2¼ Ton Chassis

$1840 2¼ Ton Complete with body and cab

F. O. B. ALLENTOWN

Built to dominate the truck business in your territory—backed by the Bethlehem guarantee and a strong national advertising campaign. Is your territory covered?

BETHLEHEM MOTORS CORP'N
ALLENTOWN, PA.

Just the Sizes You Need



The handiest and most economical way to carry small stocks.

STEVENS
CUP LEATHER ASSORTMENT

Contains 72 cup leathers. Sizes: ¾" to 1½". Size based on outside diameter. Best quality—Made for long service. **Price 40 cents.**

Also standard sizes in bulk or complete repair sets for standard pumps. Order through your jobber.
STEVENS & CO.
375 Broadway, N. Y. City



NEW ALL STEEL OIL GAUGE FOR FORDS

60¢ IT CANNOT BREAK, IT WILL NOT LEAK, IT IS ACCURATE, IT IS DEPENDABLE AND IT CAN BE READ AT NIGHT. STEEL CHAMBER CONTAINING FLOAT ROD WITH BALL ON END RISES WITH OIL.

TRADE APCO MARK
MANUFACTURING COMPANY
INCORPORATED
PROVIDENCE R.I., U.S.A.

The Only Truck Attachment that Includes Unit, Cab and Body in one Job at one Price

$385

Graham Brothers
All-3 UNIT-CAB-BODY **Truck Attachment**



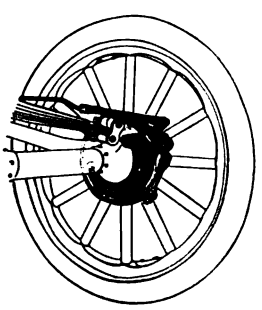
Saves you $75 to $125 on body equipment. Write for booklet. Get our dealers' proposition.

Graham Brothers, Dept. E, Evansville, Ind.

The Ford Owner Knows He Needs It

That is why he buys so many of our

Improved Emergency Brakes



The hub drum is the right place for an emergency brake. Ford owners know this.

You have a big field of prospects and a big thing to sell.

We are behind you with our sales helps and a positive guarantee.

Don't wait. Write us today.

Jobbers get in on this.

Retails at $10 a pair
Big Discounts

L. A. LEATHERS CO. **BROOKVILLE, PA.**



Miles Cheaper

Users Report Records of

8,000
10,000
12,000
15,000
Miles

Settle the MILEAGE PROBLEM— Use

TEMPERED QUAKER RUBBER

Quaker City Rubber Co.
Philadelphia



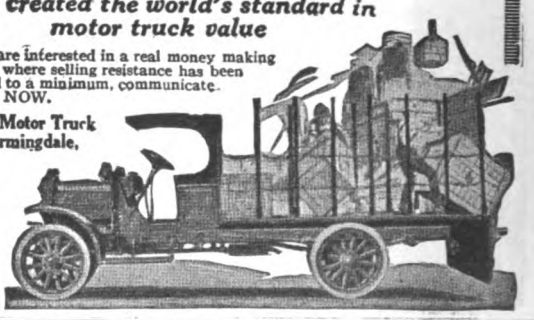
THE FULTON TRUCK

1½ Ton Capacity

Has created the world's standard in motor truck value

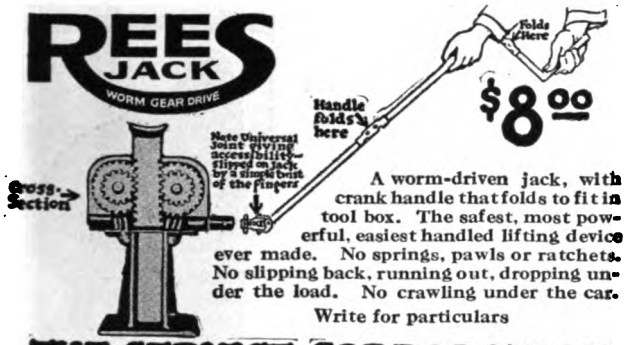
If you are interested in a real money making agency where selling resistance has been reduced to a minimum, communicate with us NOW.

Fulton Motor Truck Co., Farmingdale, L. I., N. Y.



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REES JACK
WORM GEAR DRIVE



$8.00

A worm-driven jack, with crank handle that folds to fit in tool box. The safest, most powerful, easiest handled lifting device ever made. No springs, pawls or ratchets. No slipping back, running out, dropping under the load. No crawling under the car.

Write for particulars

THE SERVICE CORPORATION
FRICK ANNEX PITTSBURGH, PENNA

The Hal Twelve

SMOOTH POWER

Seven-Passenger Touring Car or Roadster, $2600. Limousine or Town Car, (Leon Rubay bodies), $4500. Cleveland prices.

Hal Motor Car Company, Cleveland, Ohio

KIMBALL TIRES

Write for our PROPOSITION and you will be surprised to learn why we sell KIMBALL TIRES unguaranteed at such remarkably LOW PRICES.

	Non-Skid	Tubes		Non-Skid	Tubes
30x3	$ 7.55	$1.90	36x4½	$23.75	$4.15
30x3½	9.85	2.15	37x4½	26.60	4.25
31x3½	10.30	2.25	36x5	27.20	4.95
32x3½	11.55	2.35	37x5	27.60	5.05
34x3½	13.35	2.95			
31x4	14.25	3.05			
32x4	14.75	3.10			
33x4	15.75	3.10			
34x4	16.35	3.20			
35x4	17.35	3.30			
36x4	17.65	3.35			
34x4½	20.75	4.00			
35x4½	22.65	4.10			

Thousands of dealers have taken advantage of this opportunity to double their profits and business.



"Straight-Side" Type, as pictured Made also in Clincher Type

Kimball Tire & Rubber Co.
1466 MICHIGAN AVE., CHICAGO
Write immediately for territory!

Makers of Springs and Axles for Heavy Duty Service for more than Fifty Years

SHELDON
WORM GEAR AXLES

SHELDON AXLE & SPRING CO.
WILKES-BARRE : : : : : PENNA.



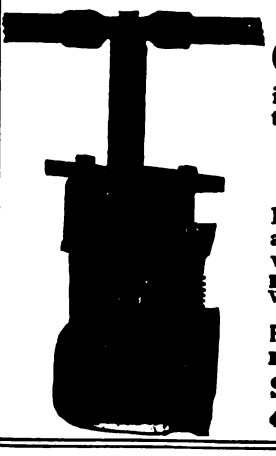
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VESUVIUS
PLUG

"The Indestructible Plug"

Selling at $1.00 it offers the dealer an article he can stand behind to the limit, and sell his trade confident that he is giving them the best—making a worth while profit meanwhile.

WRITE US

A. R. Mosler & Co., New York, U. S. A.



THE STORM & O'HAIR
Cylinder Reboring Machine

is adjustable and will rebore practically all makes of

Automobile, Aeroplane, Motor Cycle, Light Marine, Tractor and Stationary Motors

It is simple, speedy and accurate and can be used by anyone familiar with tools.

Indispensable in any repair shop. We furnish oversize pistons for all makes of motors.

FOR SALE BY LEADING JOBBERS

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Storm & O'Hair Company
426-27 W St. Thompson, Iowa



Starts the Engine Cold

Ford cars are difficult to start in cold weather without

Red Head

Priming Plugs

A few drops in the cylinder thro' the priming plug—and the engine hums.

$1.50 Everywhere.

Emil Grossman Mfg. Corp'n.
Bush Terminal No. 20 Brooklyn, N. Y.
Chicago, 1253 Michigan Ave.

OLD SOL
NITROJECTOR NO 100
THE 100% PERFECT SPOTLIGHT



$10

Complies with all laws for no-glare devices. Other dependable Old Sol Spotlights are No. 70—$7.00, No. 77—$5.00. *Ask for Old Sol for Safety*

Hawthorne Mfg. Co., Inc., Bridgeport, Conn., U.S.A.

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Cored Bars
HIGH SPEED
NON-GRAN
BEARING BRONZE
For Bushings

AMERICAN BRONZE COMPANY
BERWYN, PENNSYLVANIA
SOLE MANUFACTURERS OF NON-GRAN AND LARGEST EXCLUSIVE MANUFACTURERS OF BEARING BRONZE IN THE WORLD

Use Headlights That Identify Your Car

Distinctive types of electric headlights for all cars. Lights that identify your car. Built by the largest manufacturer of automobile lamps.

The John W. Brown Mfg. Co.
Columbus, Ohio
Detroit Office: Suite 411, Union Trust Building.



GEARLESS
DETROIT
CRANK-SHAFT
Tire Pump
Pat. Aug. 25, 1915

960,000 PROSPECTS

WITH CARS BETWEEN $800 and $1300

Now ready for Briscoe, Dodge, Chandler, Hudson, Overland, Reo, Stearns, Saxon 1916, and Studebaker cars. On and off in a jiffy without tools. Not a rubber diaphragm device. Write for details. Dealers, ask for discounts.

Price $10



DETROIT ACCESSORIES CORPORATION
559 Hillger Avenue, Detroit, Mich.

Add to Garage Profits by Oxy-Acetylene Welding

savings made, please your patrons and pay good substantial profits.

PREST-O-LITE
Dissolved Acetylene
(Ready-made carbide gas)

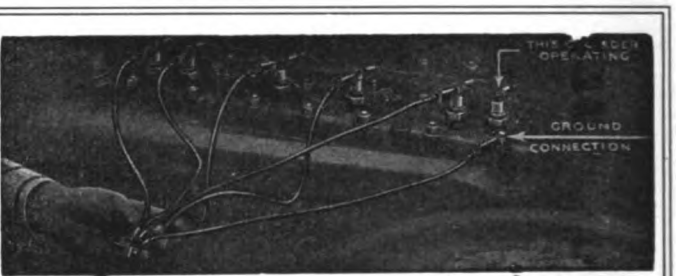
adds to the efficiency and usefulness of any good welding equipment. We furnish thoroughly high-grade welding apparatus for $75.00 (Canada, $100.00). The average user will also need gas cylinders at an additional cost, and about $10.00 worth of welding supplies. Truck and special equipment for cutting operations at extra cost.

Send for details of Prest-O-Lite Service for Oxy-Acetylene Welding.



THE PREST-O-LITE CO., Inc.
The World's Largest Makers of Dissolved Acetylene
U. S., Main Office & Factory
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TRADE MARK
SEXTONS
CASTOR
MOTOR OIL
"Your Motor's Best Friend"
Send for Catalog. Dealers—Distributors, Write
SEXTON OIL CO., 1171 Peoples Gas Bldg., Chicago, U.S.A.



THE EDGERTON MOTOR TESTER
First Aid for All Motor Troubles
Such as faulty ignition, missing explosions from any cause, weak cylinders, leaking valves or pistons, faulty valve or ignition timing, bad carburetor adjustments, knocking in cylinders or bearings, carbon troubles, etc. Made in two models for any number of cylinders.
Write for literature or order today. Prices $2.00 to $9.50
R. G. EDGERTON & CO., Suffolk, Va.

NON-BURN
ASBESTOS
BRAKE LINING
ITS SAFE-IT WEARS
JOHNS-MANVILLE SERVICE
COVERS THE CONTINENT
H. W. JOHNS-MANVILLE CO.
New York City
BRANCHES IN 55 LARGE CITIES

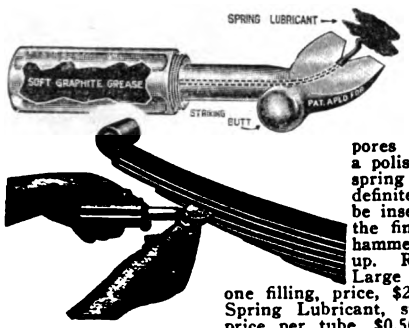
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The New Gasoline Hose.
Metal, Rubber and Fabric welded into one unit. Guaranteed for one year.
Write for details.
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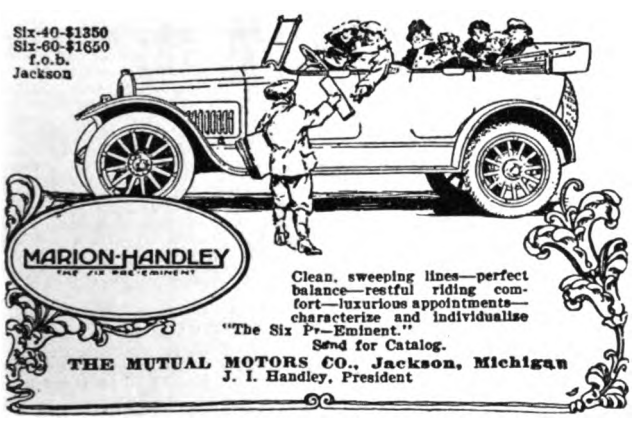
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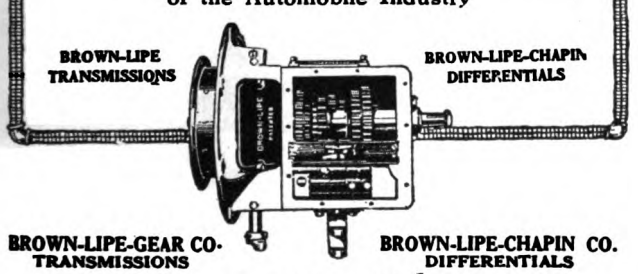
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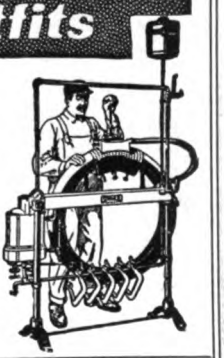
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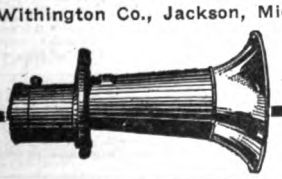
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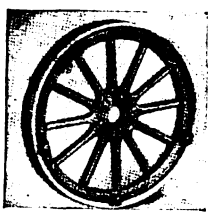
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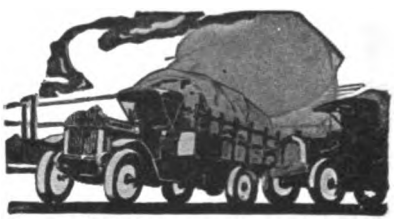
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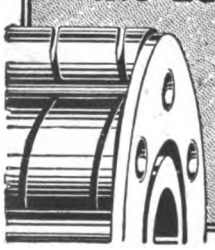


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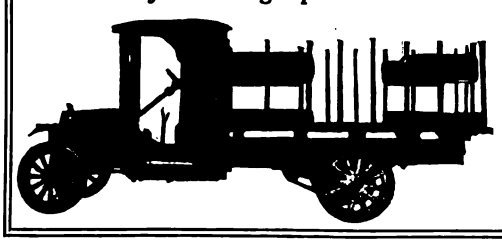
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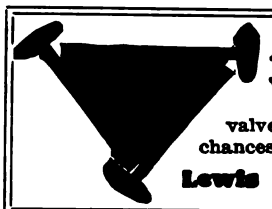
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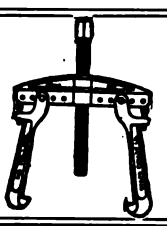
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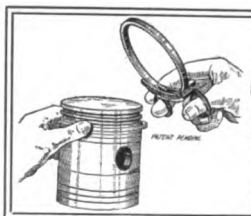
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32x3½	10.50	2.45	35x4	15.85	3.75	35x5	23.10	4.65
34x3½	11.50	2.70	36x4	16.20	3.85	36x5	23.95	4.75
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32x3½	11.55	2.25	35x4½	22.75	4.10
31x4	14.35	2.95	36x4½	23.75	4.15
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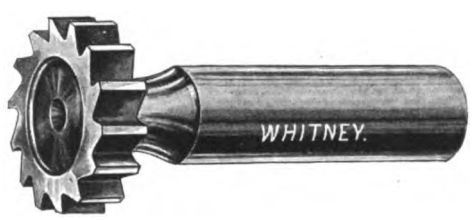
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THE need for tire conservation is greater now than ever before. Spare shoes must be protected to obtain greatest mileage when finally used. The perfect protection for spare shoes is the Famous Allen Tire Case. Three styles, all colors, all sizes. At your dealers, or write

THE ALLEN AUTO SPECIALTY CO.
Manufacturers
16-24 West 61st Street NEW YORK
2007 Michigan Avenue, Chicago

The ALLEN TIRE CASE





The Famous 43

There are just that number of steady selling, profit-making items in our catalog of

WONDER WORKER
Auto Specialties

Send for this catalog today. Investigate the line. There's push behind it. A few items:

Wonder Worker Radiator Cement: Repairs leaks 15 minutes without removing radiator. No tools or solder required.

Wonder Worker Rim-Kote. Prevents tire and shoe from sticking to rim. A graphited, quick-drying paint for coating inside rims, demountable or clincher.

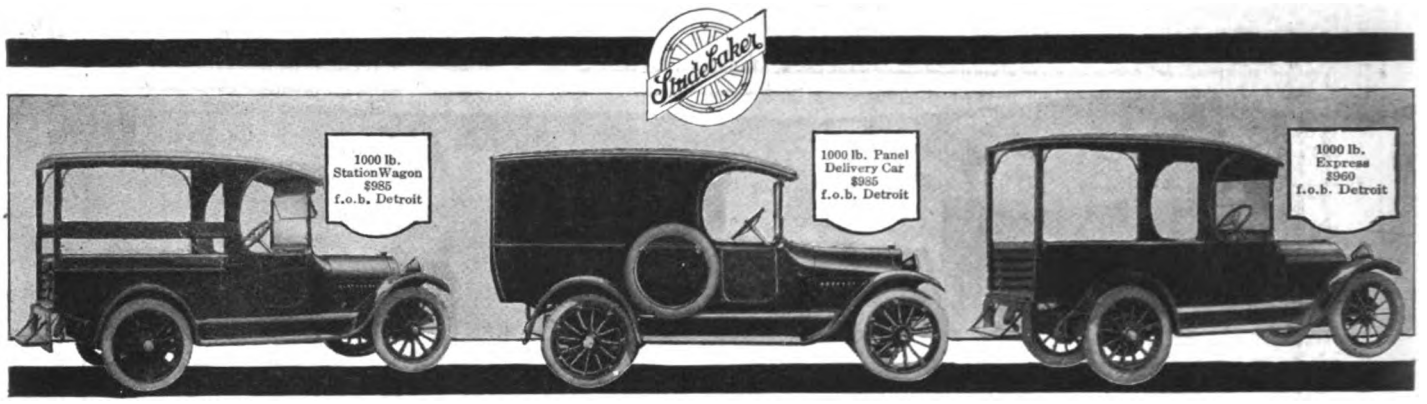
Wonder Worker Self-Curing Mohair Top Patches. Quickly and permanently repairs holes, leaks and rips in mohair tops. Absolutely waterproof.

These are a few of the 43. They all do what they say they do and do it well.

Write for our catalog now.

The Hall-Thompson Co.
Manufacturing Chemists
Hartford, Connecticut, U. S. A.

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51 Different Businesses Need Studebaker Commercial Cars

Think what sales and profit opportunities that opens to Studebaker Dealers.

A careful analysis of the market for the six different Studebaker Commercial Cars shows at least fifty-one different types of business in the average American city to which one or more of these cars is ideally adapted.

And that fifty-one must be multiplied by a fair sized figure to get a true idea of the sales possibilities, because each of these different businesses has many representatives. For instance, grocers represent but one class of the fifty-one. How many grocers are there in your city?

Do a little analyzing on your own account. Take the classified section of your local telephone book. Check off the businesses which you know could better their delivery service and increase their profits with Studebaker cars. Make up a prospect list now.

Studebaker dealers who are using this plan are making big extra profits in the in-between seasons and keeping up sales to the record point all the year 'round.

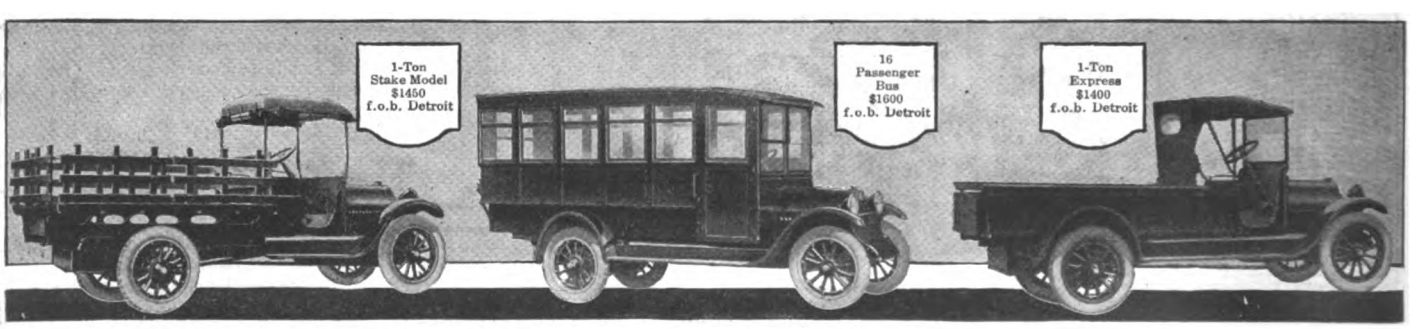
Six Commercial Cars, embracing everything except the heavy duty type, enable the Studebaker dealer to sell practically every worth while prospect.

Write today for detailed information.

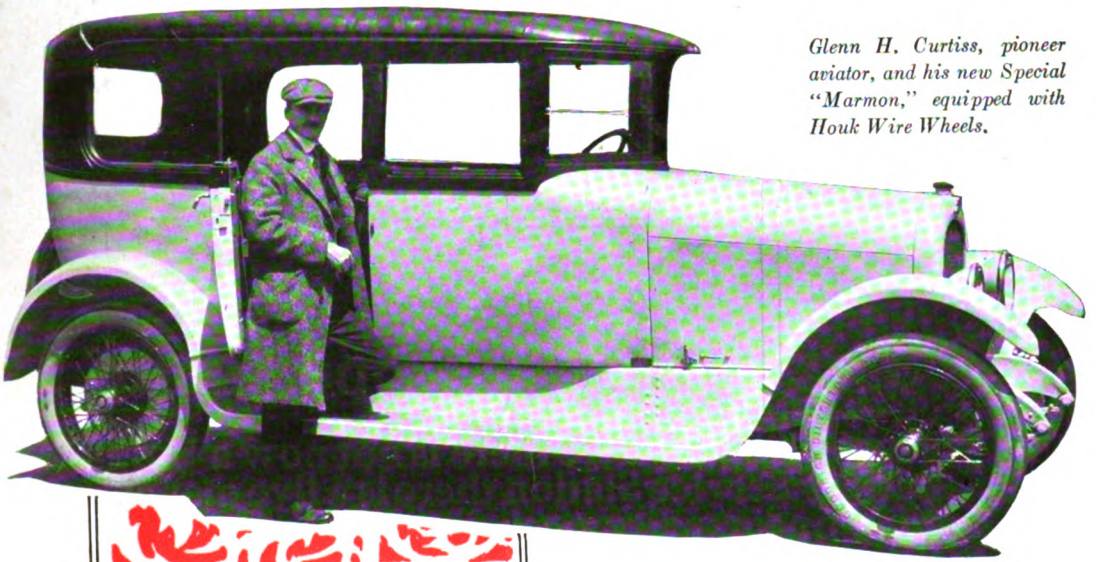
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Detroit, Mich. **South Bend, Ind.** **Walkerville, Ont.**

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Glenn H. Curtiss, pioneer aviator, and his new Special "Marmon," equipped with Houk Wire Wheels.

HOUK
QUICK CHANGE
WIRE WHEELS

Harmony

Cars of high quality and distinctive design, that mirror unerring taste and excellent judgment, harmonize best with Houk Wire Wheels.

This is clearly exemplified by the Specially Designed, Custom Built motor cars that the present demand for personally selected adornment is bringing forth.

Nearly all of them are Houk equipped.

Wire Wheel Corporation of America

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GEORGE W. HOUK PLANT, Buffalo, N. Y.

SPRINGFIELD PLANT, Springfield, Mass.

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USL TRADE MARK

U S LIGHT & HEAT CORPORATION

A Service Station Opportunity

IN every town where there is not now a U S L Battery Service Station there is a live money-making opportunity open for some one.

Consider these facts—more automobiles are being shipped with U S L Batteries as standard equipment than ever before—ask us for a list of cars.

Car-owners will naturally seek U S L service stations for repair and recharge work.

Then too, as U S L Battery owners tell others about the excellent service they are getting from these machine-pasted plate batteries, you will find replacement sales developing rapidly.

U S L Batteries are right at the top because of their superior plate construction—because every detail exclusive with U S L has been designed to spell satisfaction.

We back up every U S L service station, with a local advertising and sales campaign. Write us at once, and let us give you complete details.

U S Light & Heat Corporation

General Offices and Factory: Niagara Falls, New York

Branches in
New York, Chicago, Detroit, Kansas City, San Francisco, Washington, D. C.

Service Stations in Principal Centers



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WINTER BUSINESS NUMBER

MOTOR WORLD
for
DEALERS, JOBBERS AND GARAGEMEN

Volume LIII
No. 2

New York, October 10, 1917

Twenty-five cents a copy
Two dollars a year

Note How Hudson Dealers Prosper

Hudson Dealers make money. Wherever Hudsons are sold, the Hudson Dealer dominates. He is the leader in his community.

He is envied and often referred to by his less successful competitors as "lucky." It is not "luck," however, but sound and sane merchandising that has made these years of big profits possible.

In any city, note the prestige Hudson Dealers enjoy. Invariably they have the finest showrooms—the best locations.

Hudson Dealers are executives, and not just automobile salesmen. Their standing is unquestioned. They have the ability to plan, look into the future, and grow with Hudson.

Since last year over 40,000 Super-Sixes have been sold. Think what this means to Hudson Dealers.

Wouldn't you like to be a Hudson Dealer and share in these profits? If you think that you measure up to the Hudson standard, write us. It may be to our mutual advantage.

HUDSON MOTOR CAR COMPANY

Detroit, Michigan

There Are Great Opportunities for Men Who Sell Hudsons

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Van Sicklen
ELGIN
SPEEDMETERS

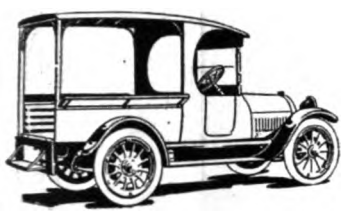
Built to Watchmaker's standards by Elgin watchmakers in the largest and finest equipped speedmeter factory in the world.

The Van Sicklen Company, Elgin, Ill.

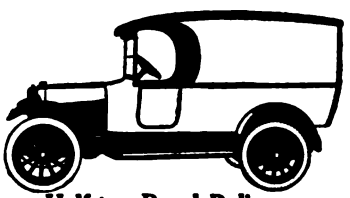
Factory—Elgin National Watch Company

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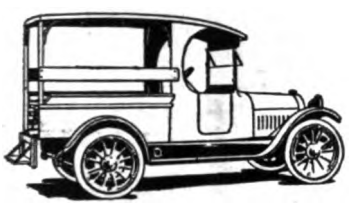
No Idle, Profitless Days for Studebaker Dealers



Half-ton Open Express
$960



Half-ton Panel Delivery
$985



Half-ton Station Wagon
$985



One-ton Open Express
$1400



One-ton Stake Body
$1450



16 Passenger Bus
$1600

All Prices f. o. b. Detroit

Studebaker Commercial Cars make extra sales and profits for in-between seasons. Now is the time to push their sale.

AROUND the corner is a growing grocery concern that needs a Studebaker Half-ton Open Express to replace its out-of-date delivery equipment.

Across the street is a dry goods store that should have a more stylish looking delivery motor to keep up the reputation for exclusiveness that the store has won. The Studebaker Panel Delivery Car, exceptionally aristocratic in design and finish, will just meet its needs.

There's a liveryman, perhaps who could make more money with his 'bus line if he had a Studebaker Station Car or a Studebaker Sixteen Passenger 'Bus — an expressman to whom you can sell a Studebaker Half-ton or One-ton Express Car.

In fact, a careful analysis of the market for the six different Studebaker Commercial Cars shows at least fifty-one different types of business to which one or more of these cars is ideally adapted.

And the field is not limited to city business. Farmers everywhere are buying Studebaker Commercial Cars for hauling milk, grain, stock or other farm products to market.

And that only hints at the wealth of sales opportunities Studebaker offers its dealers. There need be no idle, profitless days for the dealer who has the Studebaker line.

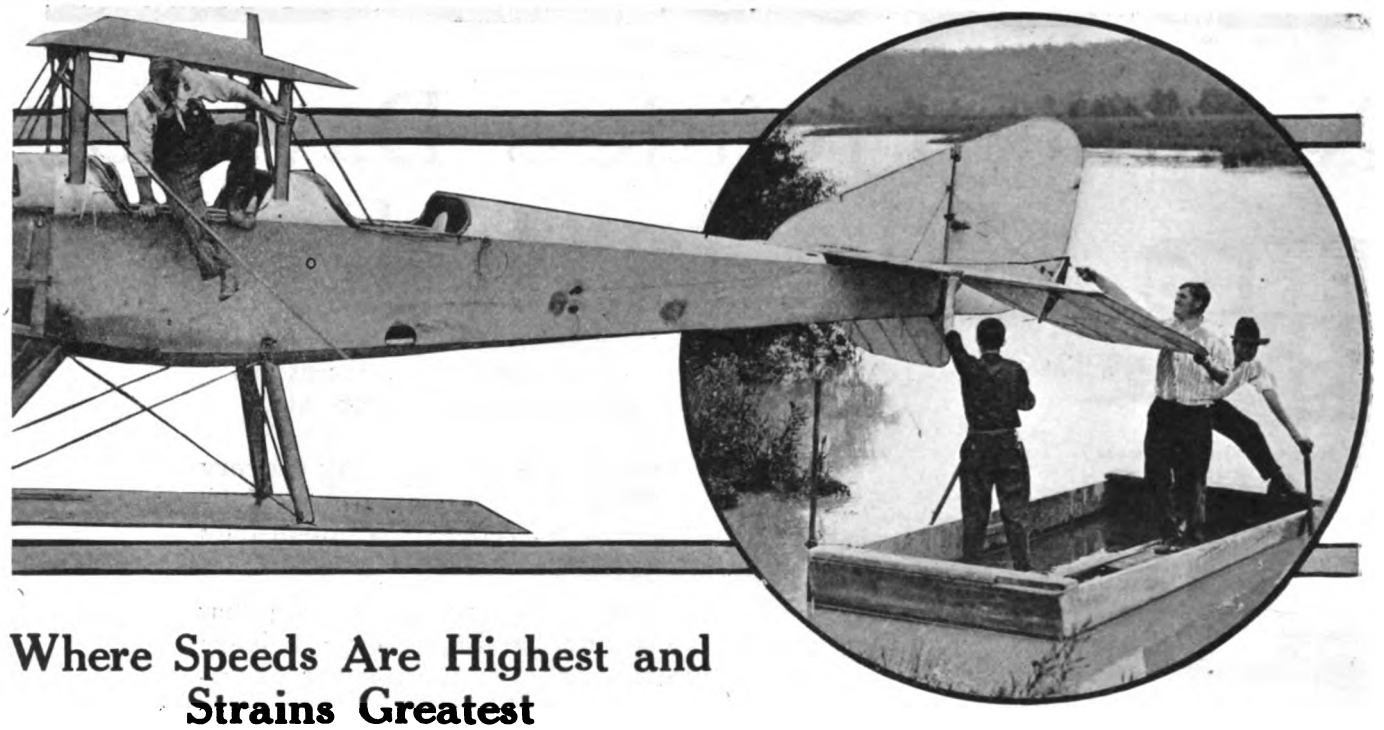
Write today for detailed information.

Studebaker

Detroit, Mich. South Bend, Ind. Walkerville, Ont.

Address all correspondence to South Bend

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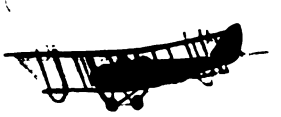


Where Speeds Are Highest and Strains Greatest

The air planes that are hovering over the enemy's lines cannot afford to take a chance with inefficient bearings—nor can they risk a hot bearing—or even lubrication trouble. Every thing must work dependably at high speed.

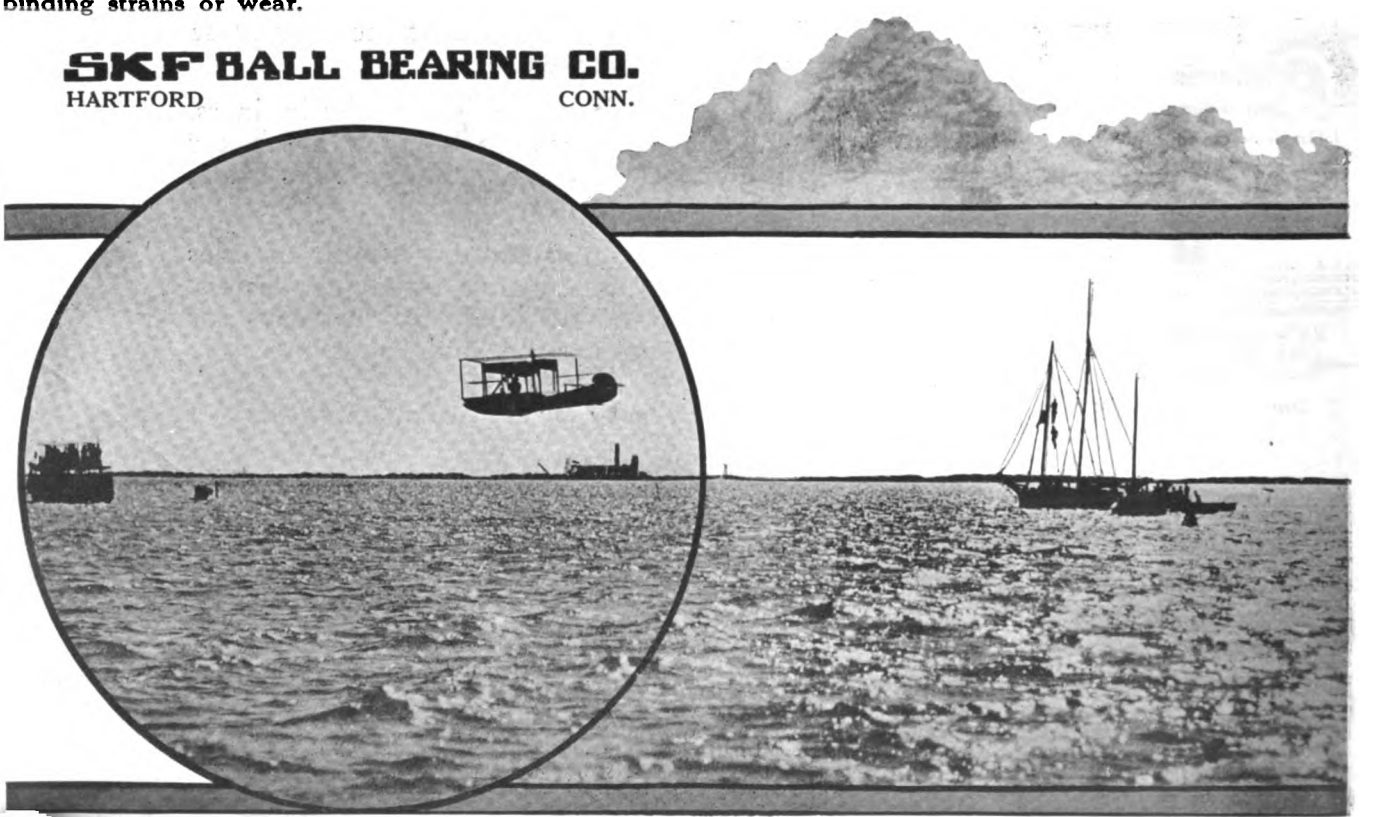
Particularly on propeller shafts SKF has long been recognized as particularly advantageous. Subject to whip and throw, the shaft deflections caused by the warp and weave of the planes, which puts heavy strains on the bearings, are automatically absorbed by SKF without binding strains or wear.

SKF
BALL BEARINGS



Safety First—Self Alignment

SKF BALL BEARING CO.
HARTFORD CONN.



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MOTOR WORLD
for
DEALERS, JOBBERS AND GARAGEMEN

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"NORMA"



"A composition for cheapness and not for excellence of workmanship is the most frequent and certain cause of the rapid decay and entire destruction of arts and manufactures." *Ruskin*

The service-rendering qualities of "NORMA" Bearings are important factors in the high performance records of the high-grade magnetos and lighting generators used on cars of the better class.

Be Sure. See That Your Electrical Accessories Are "NORMA" Equipped.



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GRAY & DAVIS STARTER

FOR FORD CARS

Stimulate your Fall and Winter business by selling Gray & Davis Starters. Now is the time to interest Ford owners in the convenience; the reliability; the necessity of electrical equipment.

Increased profits, added sales, genuine satisfaction, result in handling this essential accessory.

The sturdiness and simplicity of Gray & Davis Starters is one reason why they are in constant use on thousands of Fords—everywhere.

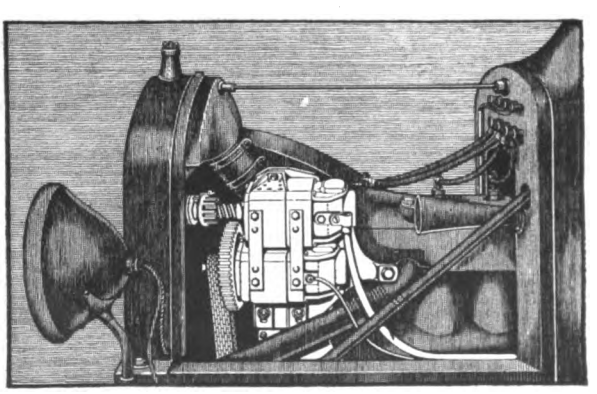
Whether for business or pleasure the benefits derived sell more of them—no engine too stiff—abundant power—steady light running or standing—dealers appreciate its careful construction. Owners enjoy its convenience.

Write for particulars

GRAY & DAVIS, Inc., Boston, Mass.

CANADA—UNIVERSAL CAR AGENCY, WINDSOR, ONT.

SYSTEM COMPLETE



$85.00
F. O. B. BOSTON

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MOTOR WORLD
for
DEALERS, JOBBERS AND GARAGEMEN

Vol. LIII | New York, U. S. A., Wednesday, October 10, 1917 | No. 2

What This Issue Is = HOW

Our Second Winter Business Number

THIS is the second annual Winter Business Number of Motor World. It is filled with ideas and plans for keeping the winter slump out of the business of the dealer, garageman, jobber and manufacturer.

It is issued Oct. 10 in order that all the plans in the issue may be in the hands of the trade several weeks before the real slump is due. Our first Winter Business Number, one year ago, *helped hundreds of our readers to make more money during the winter months*, and we have tried to make this present Winter Business Number the most valuable issue the publishing world and our readers have ever seen.

It is the first really HOW issue ever published by any paper. There is nothing in it but How-to-do-it information. We could have filled this issue with interesting stories about business, we could have run pictures of men, of garages, of salesrooms, of lots of things—but we knew our readers are interested *only in HOW to make money this winter*, so we discarded all stories, worked out plans for getting Winter Business and have set the steps in these plans down in 1, 2, 3 order so that each plan is a chart and blueprint of Winter Profits.

Here's What's in the Issue

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Be a Man—Not a Woodchuck



Read the woodchuck poem on the opposite page and then decide to be a LIVE DEALER—not a woodchuck. Energy, action and spizz will make Winter Profits for YOU

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Read This Poem Out Loud

Then look at the picture opposite

Be a Man—Not a "Chuck"

By S. T. WILLIAMS

IN summer time the woodchuck is as spry as he can be;
He digs his holes and bobs about, and works industriously,
But when the winter winds come on, and bring the ice and snows,
He curls up in a little ball, and off to sleep he goes.

Because he is a spineless beast, all full of doubt and fear,
He doesn't try to make a fight—and loses half a year.
Some dealers are like woodchucks, and for half a year are dead,
While profits, effort, labor are consumed in overhead.

The winter snows and winter winds seem to freeze up their brain,
They sit around and loaf and smoke, till spring comes 'round again,
Because they are a spineless sort, and haven't got the "spizz"
To get right out and hustle, and bring in the "winter bizz."

They could educate their owners to enjoy a winter drive
And make them see that winter is the time to be alive.
For winter tops, closed cars and robes, and many things like this
Were just designed to make the drive a time of joy and bliss.

And though perhaps not every man would care to drive his car,
The ones that did would surely help the business up to par.
But just because an owner does not care to brave the chill
Don't place him on the dead list, or preserve him from a bill.

He should be taught to realize, no matter how he stalled,
That winter is the time to have his motor overhauled.
For if he waits till spring comes 'round he'll surely be too late,
As when the rush commences, he is bound to have to wait.

If you're a woodchuck dealer—why, sleep on the winter through;
But if you're strong and full of pep, this issue is for you.
It's not designed to please the mind by quickly glancing through it,
But for planning, thinking, working—what to do, and how to do it.

Boost winter business, dealers, show that you possess the pluck,
Be a live one and do business—be a man and not a "chuck."

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Our Winter Business Message To You

AS you turn the pages of this second annual Winter Business Number of MOTOR WORLD what is in your mind?

Are you seriously thinking of what the coming winter means to you? Are you adjusting your business telescope to peer into the five months of future and see what will happen to your balance sheet when the cold of winter comes and the motor trade's customers shiver and draw their purse strings tighter?

If you are not doing this you should.

Let us speak plainly for a moment. Let us point out some of the things we have observed during years of study of this industry and trade. And let us talk directly to each reader as we review the past briefly and take a look forward in the war-scarred period in which we are living.

What we are going to say concerns the business of the dealer, garageman, repairman and jobber from October to March.

This business during past seasons has been depressed. When the cold days have come the car owner has ceased driving his car, he has ceased to patronize the repairshop, he has ceased to buy accessories, and as a profit-producing customer he has become as an empty tin pail.

The result has been that dealers, garagemen, repairmen and jobbers have suffered. In remote sections some have shut up shop entirely and taken jobs in lumber camps and elsewhere until the warm days of spring brought business back.

They have encountered a trying period of business —and have acknowledged defeat.

They have lain down.

Not all of them are to blame. The man who sees his trade gone for five months cannot be blamed if he jumps at the first job that will tide him over until spring. And many have done this because they have not been able to figure out a way to overcome this adverse business condition.

But things in this trade are changing.

The progress of the trade has brought with it a realization that there are many ways in which the trade can combat this winter condition. We KNOW now that the dealer who TRIES and who uses modern Winter Business Plans can make money even in the winter.

He can sell cars.

He can keep his shop going.

He can sell accessories.

He can do things that may seem foreign to his business, new activities, that nevertheless fit in well and will PRODUCE A PROFIT.

For a long time MOTOR WORLD has studied this condition. It has scanned the whole field. It has found the cause of the trouble and in this Winter Business Number has set forth plans that will remove that trouble.

What is next?

What next is needed is ACTION on the part of the trade.

The dealer who says: "Yes, that is a good idea," and then fails to act is NOT a good business man. The garageman who says: "Yes, I presume those plans would bring me business," and then fails to act is NOT a good business man. The jobber who says: "Yes, I suppose I could help out," and then doesn't help out is NOT worthy of the position he occupies as a supplier, teacher and leader of those whom it is his privilege and duty to serve.

The original trouble with the Winter Business Slump was lack of knowledge, lack of Winter Business Plans. The present trouble is lack of ACTION.

To-day we KNOW how we can overcome the Winter Business Slump—and we KNOW that the greatest factor is ACTION on the part of the dealer, garageman, repairman and jobber—*and manufacturer, too.*

Winter Business is no longer a trade problem. It is a MAN problem.

You are urged to study carefully this Winter Business Number. We urge you to make it your textbook for the next five months, your Guide to Winter Profits. Keep it on your desk. Use the plans, ads and letters in it. Action is what counts.

This Week's Reilly Story

By Ray W. Sherman

"—and it's the only way any of us will ever amount to anything. It's the only way we ever can develop our businesses and build to bigger profits and GREATER SUCCESS. It's the key to the door before which so many millions have wished and waited—and died—and been followed by countless other millions who have wished—and waited—until it was too late to do anything.

"There is only one way out," Reilly concluded. "It is the one big test of whether we are real men or merely plodders, imitators and ne'er-do-wells.

"The world is full of chances. There are plans and ideas all around our feet. The way to bigger business, to WINTER PROFITS and years of prosperity is as plain as the lights of Broadway, and the only remaining factor is the ENERGY, ACTION AND SPIZZ in each and every man.

"Have you got it in you?

"Think it over!"

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Extra Business

How to Make Money Doing Things You Haven't Done Before

THERE are lots of things you can do this winter besides sticking close to selling cars and running a garage and repair shop. Your business is fitted for handling many other activities.

You can, for instance, sell electric lighting systems to farmers, which certainly is outside of your regular line of business. Isn't it? Or you can sell trailers, or trucks, or tractors. Or you can sharpen skates or build sleds, or do any one of a long list of things which you never have done before.

Any one of these extra activities will bring you in a profit. It will help keep your business from a winter loss. Don't think you can do nothing except sell cars and run a garage just because that is what the sign over your door says.

On the pages that follow are some of the things you can do. You will find them described in detail. Use the ideas and plans.

How to Sell Farm Tractors

THE small farm tractor that will do all kinds of work is a coming thing. The farmer has great need for it, although many farmers won't see this need until some live dealer points it out to them. And the live dealer who points it out will make a lot of money as a pioneer in the field while the less aggressive dealers will have to be in the follow-after class. The world didn't know it needed millions of tubes of tooth paste until the *tooth paste makers showed us our need.* Now we can't get along without it. And it is the same with safety razors, bathtubs, starters, telephones, electric lights and hundreds of other things.

We had to be told the need and now we ourselves are the greatest boosters for the things we didn't know we needed until some one showed us that we did need them.

So it is with tractors. YOU know why the farmer needs them. Show him how they put more hours into a day and make the day easier and more profitable.

Here Is a Plan

1—Investigate the tractor field. Look over several tractors and decide upon the company and the tractor—one you think the best.

2—Study the needs of the farmers in your section. Determine the nature of your selling field.

3—Get the agency for the best tractor you can get and ask for some literature of a size that will fit your business envelopes.

4—Arrange with your bank or some other financial institution for handling time payments.

5—Arrange a demonstrating field near town. Have there implements such as you will encounter among farmers in your sales work. If, however, all the farmers are using the old draw-beam, one-bottom, two-horse plow with its two handles and man walking behind, get a two- or three-bottom plow that fits your tractor and demonstrate with that. On your demonstrating farm, which need not be large, have all the implements necessary for a complete demonstration.

6—Make a list of the farmers who have farms large enough for a tractor. If there is any doubt as to a man's needing one, put him on the list, anyway.

7—Put these names on cards in a drawer. On each card have in addition to the man's name and address such data as this:

Size of farm.....
Nature of acreage soil.....
Nature of crops.....
Acres plowed, and when.....
Number of horses.....
Pieces of machinery.....
Kinds of power work tractor could do.....
.....
Number of men.....
Is farmer progressive or not?.....
Figure time saving on as many jobs as possible .....
Show how night work can be done.....

8—Get demonstrator.

9—Keep it always in best of condition.

10—Send to your prospect list a piece of literature and Tractor Letter No. 1. (See page 41.)

11—Determine who in your whole list is the best prospect.

12—*Thoroughly prepare yourself on his case.* Know all there is to know

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about how the tractor will fit on his farm.

13—Call on this man as soon as he has had time to read your letter and continue to work on him until your letters develop other prospects or until you believe it best to leave him and seek another. This prospect is the start of your personal sales work. As prospects continue to develop, follow them up personally and by letter.

14—One week after letter No. 1 send No. 2. (See page 41.)

15—One week later send No. 3. (See page 41.)

16—If not a single reply should come from your letters, simply keep making calls on what seem to be the best prospects and send letters and literature.

17—When calling on a prospect endeavor to arrange with him to visit your demonstrating field. Have your car with you and offer to drive him there at once. *One of your first efforts should be to get the prospect to your field.*

18—When you get a prospect to your demonstrating field, show him those things that will most appeal to him. If he never cuts any wood, don't bother with that until you have shown him the kind of work he wants, and unless it is necessary don't waste time showing him how well the tractor can do something for which he cannot have any need. Stick to the points that you think appeal most to him.

19—Let him run the machinery some. *But if skill is required handle it yourself.* Don't give him an opportunity to try something he may not be able to do without practice.

20—Don't make the demonstration unduly long. Too little is better than too much. You can always show "a little more," but you can't *"un-show too much."*

21—Tell how urgent it is that a tractor be on hand when the spring season opens. Tell how handy the machine can be all winter. Urge that the tractor be bought now. Cite the probable higher cost of materials.

22—Ask the farmer what winter power work he has. Note them down. If he aids you in compiling this list, he is greatly interested. Ask it this way:

"If you had this tractor, Mr. Prospect, what different kinds of work could it do during the winter?"

If he says there is no "if" and that he isn't going to buy, say: "I know you're not; but if you did have it what could it do?" Make him think of the tractor as being on his farm and make him answer your questions if you can.

23—Touch upon the point of a shelter for the machine. Tell how it will serve better and longer if given good care, the same as a horse gets.

24—Then ask him if he would keep it in some of his present buildings or erect a small garage for it. If he specifies the location, he is coming nicely.

25—Then ask him what terms he would prefer. If you believe he will pay cash try to get cash. But have every arrangement as to terms previously made with some bank or financing company so he can't slip in this objection at the last minute.

26—Fill in the specifications and other data on a short contract as you talk. Then mark with an X the spot where he is to sign and hand the contract and pencil to him just as though he were going to sign it. Say: *"Right here, Mr. Prospect,"* and point to the X.

27—Get deposit. If possible have all papers handy and partly made out so you can wind the whole thing up right there, time payments and everything else. It would help matters if you had a salesman with you to engage the attention of the prospect while you were busy with papers. This would keep the farmer from changing his mind.

28—Deliver the tractor as soon as you can.

29—Ascertain then if he needs an extra tractor equipment and sell it if possible.

30—Give an unusual amount of personal attention to the first few tractors you sell. Help the farmer develop different kinds of work for it. Help him figure out ways it can help him. Make him an enthusiast. This will develop sales points for future use and will give your goods a good start in your territory. This does not mean you should neglect future buyers. It means you should use the first few sales as sales experiments.

31—Get a testimonial letter after a while.

32—In case it has not been able to close the deal on your demonstrating farm it may be necessary to take the tractor to the farmer.

33—During your campaign run some newspapers advertising if the cost is not too prohibitive. One or two ads a week should help greatly.

How to

Sell Garage Heating Plants

EVERY car owner who has a little garage in his backyard likes to putter around fixing the car, repairing the chairs and doing all sorts of odd jobs. But he can't do this this winter unless he has some way of keeping the garage warm.

Perhaps a few of them are trying it with old oil stoves. While the old stove will raise the temperature a little while the man is working it can't be run 24 hours a day, things are likely to freeze up nights and then the car owner must stand the heavy loss to put his frozen car back into shape.

He is an easy prospect for any one of these garage heating plants that keeps the garage warm day and night, protects the car and makes the garage a comfortable workshop.

Do It This Way

1—Investigate the selling field. As a starter you can drive up and down some of the best residential streets of the city where there are little garages in the back yards, list the number of the houses and from your city directory get the names. This will give you a list of a hundred or 200 excellent prospects.

2—*Investigate the manufacturing field.* Write to a list of manufacturers of garage heating plants asking them for complete literature and specifications of their systems. Select one that is best suited to your field. If there is one that runs by illuminating gas and if there does not happen to be illuminating gas on the streets you have canvassed, that one is, of course, not good. Make sure that the system fits in in every way.

3—Get the agency for this heater.

4—Get from the manufacturer literature advertising this system. Make sure that some of the literature is of the size that will fit your business envelopes.

5—Ask the manufacturer if he circularizes prospects and if he cares to circularize a list that you will give him. If he says yes, furnish him with a list.

6—From the license list prepare a prospect list. Owners of very low-price cars probably are not good prospects because some heating systems cost as much

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as some cheap cars. Pick out according to your own judgment a list of 500 or 1000 names.

7—From this list select those within a certain area or on a certain street and work hardest on this particular section in order that you may get a start. After you have sold one, this sale will influence prospects who live nearby.

8—When you are all set send garage heater letter No. 1. (*See page* 42.)

9—One week later send letter number two. (*See page* 43.)

10—One week later send letter number three. (*See page* 43.)

11.—After letter number one has been received by the prospect, begin making calls. For call number one select what you consider a good prospect and make every effort to close this man.

12—Your sales story will be based upon these lines:

Assume that it is necessary for you to call upon the man in this office. You tell him he has a nice garage. Ask him if he has a heater in it. Tell him the garage looks substantial and you wonder whether it was built last winter and whether he kept a car in it last winter. If it is unheated and he used it last winter, ask him if he didn't find it inconvenient to drain the radiator, have the motor get cold, and if the upholstery and paint didn't suffer from low temperatures. Suggest a heater. The heater will keep the garage warm, prevent the car freezing, keep the motor warm, make the garage a comfortable workshop in which the car owner can work in comfort at all times, his fingers won't get cold, the tools won't frost and the garage will become a recreation ground. Also, cold motors cause backfires and garage fires.

13—Tell the prospect he will find an imperative need for this heater soon. He would enjoy it right now and will feel safer if he has it installed before cold weather arrives.

14—Ask how large his garage is. *Make a sketch of the floor.* Ask where the bench is located, etc.

15—Select on this rough plan what you think is the best location for the heater and ask him if he doesn't think this is the best location. If he says yes, he is pretty well sold on the idea.

16—Tell him you have had considerable experience with cubic contents, with the size of heaters and recommend the size of heater you think he needs.

17—If there is any contract for this sale, make notations as to the size of the heater, etc., and if it is necessary for him to sign the contract, make a little mark where he must sign and pass the pencil and contract to him.

18—Securing a deposit is optional with you, depending upon the character of the customer, the cost of the heater, etc.

19—Deliver the heater as soon as you possibly can.

20—After it is delivered and paid for assist him in installing it. This does not mean that you should do a lot of work for nothing, but that you should advise him and see that he gets the things started right.

21—*Drop around and see that he is satisfied with his purchase.*

How to Sell Gas Engines

CAN'T you in your imagination see right now a large group of people who could use gasoline engines? Farmers can use them for various purposes, small shop owners can use them and the field is made up of a great variety. Inasmuch as you already know gasoline engines so thoroughly, you are well fitted to sell products of this kind.

Here's How

1—Investigate the manufacturing field. Write to a list of manufacturers, and from the list select what seems to you to be the best engine.

2—In selecting this motor consider also the people who are going to buy it. Give careful consideration to your sales field.

3—Get the agency for this engine.

4—Call a meeting of your organization and list all the people you can think of who might use gasoline engines. Drive around town in your car and out in the country and add other names to this list.

5—Secure from the manufacturer literature advertising this engine. Included in the literature should be some of the size that would fit your business envelopes.

6—Send gas engine letter No. 1. (*See page* 47.) Include some literature.

7—Send gas engine letter No. 2. One week later. (*See page* 47.)

8—Send gas engine letter No. 3. One week later. (*See page* 47.)

9—Begin calling on your prospects. Call first on the one you consider the easiest to sell.

10—Continue making calls.

11—Before going to a prospect post yourself thoroughly regarding him. *Have all ready in your mind the things the engine can do for him and don't wait until after you get there to do your investigating.*

How to Sell Carbureters

EVERY car owner wants to save gasoline, wants his car to run better, wants better motor action in winter and demands greater efficiency. With cars in the lower price classes a different carbureter will often give those results. All you have to do is find what owners to go after and then sell them YOUR carbureter.

It Can Be Done:

1—Talk with your service manager about cars and carbureters. Determine what cars you should go after and what carbureter is best.

2—If you haven't the agency for a good carbureter try to get one.

3—From the license roll prepare a list of the cars you propose to equip. Maybe you already have such a list.

4—Send Carbureter Letter No. 1, with a return card, which reads as follows:

"I am interested in further information about what the —— carbureter can do for my car and request that you explain its operation to me. John Jones."

5—One week later send another carbureter letter.

6—One week later send the third carbureter letter.

7—Select what you consider the best prospect and go after him personally. Select if possible a man who you know has had carbureter trouble. Always ask the men you talk with if they know others who have had trouble.

8—Get testimonial letters when possible.

9—Arguments why your carbureter should be used are:

a—Uses less gas.
b—Gives more power and speed.
c—Makes starting easier the year around.
d—Handles better the hard-to-vaporize gas of today.
e—Better motor action.
f—Better winter service.
g—More satisfaction and peace of mind.
h—Winter a good time to have the work done, as both you and the car owner have more time.

How to Sell Wire Wheels

THERE are lots of old cars that can be made into quite kippy-looking outfits if they are fixed up with a set of wire wheels. All you have to do is get in touch with a lot of these car owners and do your sales work.

Here Is the Way

1—From a license list pick out all the old 1915 and 1916 cars and possibly the 1914 too.

2—Send wire wheel letter No. 1. (*See page* 43.)

(*Continued on page* 14)

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How to

Cash In on Christmas Spirit

AT Christmas time men's purse-strings are loose. Mankind looks for a place to spend money. Everyone wonders what can be given that will be a suitable gift and at the same time a useful gift. None likes to give useless things that are thrown away and never used.

Of all the Christmases the world has ever seen this is the one when giving should be useful.

What more useful thing is there than something pertaining to motoring? Half the world motors and the other half rides with it. The other half can repay the motoring half's favors with motor gifts. Those who motor can give motor gifts to one another.

It is a big, gleaming, profit-producing idea.

You can meet the Yuletide smiles of the world, enjoy a pleasant and busy merchandising period and make a lot of money.

This Is the Plan

1—Sell yourself on the Christmas Business idea.

2—Determine to go after some Christmas Business.

3—On your scratch pad divide the campaign under these headings:

a—Goods.
b—Prospects.
c—Store interior.
d—Displays.
e—Advertising.
f—Letters.
g—Holiday cards.
h—Paper, string, etc.
i—Training salesmen.

4—Go over your stock and make up a list of goods that will make suitable gifts, with prices. You will find (*list furnished by the Auto Supply Co., New York*):

Hammers, 10c.-15c.
Screwdrivers, 10c.-$2.
Mufflers, $1 up.
Robes, $7.50-$60.
Caps, $1.50-$2.50.
Clocks, $3.25-$20.
Jacks, $5-$10.
Bulb boxes, 21c.-75c.
Body polishes, $1.
Pumps, $4-$6.
Tire gages, $1.25-$2.
Thermos bottles, $2.75-$4.
Lenses, $1-$6.
Glare disks, 75c.-$1.
Radiator ornaments, 75c.-$2.
Gloves, $2.75-$10.
Heaters, $1.25-$25.
Oil guns, $1-$1.50.
Flashlights, 75c.-$5.
Motometers, $2.50-$10.
Skid chains, $5-$9 per pr.
Blue Books, $3.
Spotlights, $5, $7, $10.
Mirrorscopes, $1-$5.
Cigar lighters, $2.50-$5.
Heel rests, 75c.
Grease guns, $2.50-$6.
Vulcanizers, $1.50-$20.
Electric horns, $6-$15.
Hand horns, $3-$4.
Sparkplugs, 50c.-$1.50.

5—Keep this list always before you. Give copies to everyone in the organization with instructions to suggest these articles as Christmas gifts.

6—Print a small 4-page Christmas booklet in colors, such as red, black and green, listing the goods you have picked out. On the front cover print:

"MAY WE HELP YOU MAKE IT A MERRY CHRISTMAS?"

Have the first part in small type and the "Merry Christmas" in title form and size. On the inside front cover print:

"We bet you are puzzled. Everyone always is. Selecting Christmas gifts is a trying problem. You want to give something that will be liked, that will be useful, that won't be thrown away, that won't be the same as everyone else gives and that comes within the price reason. Realizing this, we wish to suggest a few gifts for your friends who own, drive or ride in motor cars. On the opposite page are gifts, any one of which is suitable.

Merry Christmas
from JAMES P. JONES & COMPANY
45 PALMER ST.
The Mt. Vernon Garage

A Merry Christmas
It has been ours to serve you in the past — May the future bring a merited continuance of that privilege.
1917
THE FIFTH AVENUE GARAGE
34 FIFTH AVE.

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Merry Christmas
from AUTO EQUIPMENT AND GARAGE CO.
14 MORELY PL.

The John Mann Co., 472 Fourth Ave.
Wishes you a Merry Christmas

In the future as in the past it is our desire to serve you and in such service to merit your continuous patronage.

And the prices range from 10 cents upward. These gifts are always acceptable because they are useful. Let us help you select gifts for your men and women friends."

On the third page print the list with the heading: "A Merry Motor Christmas." On the back cover print: "AND A HAPPY NEW YEAR."

7—Compile a list of all car owners. List as many women as you can. Get house addresses where you can.

8—Trim the interior of your store with evergreen, holly, and colored lights and make it look Christmasy.

9—Decorate Dec. 1.

10—Arrange holiday goods conspicuously and attractively.

11—Letter some show cards such as: *"Dad will like this," "Keep his foot from slipping," "An ideal Christmas gift,"* etc.

12—Set up a tree trimmed with lights and gifts and labels.

13—Put Christmas decorations in the windows.



14—Use plenty of colored lights and put up signs to the effect that you sell these lights and can get trees also if desired.

15—Change displays every week or half week. Don't let the show get stale.

16—Use display cards.

17—Begin Dec. 1 to advertise in the newspapers. (*See page 89, 90 and 91 for a suggested ad.*)

18—Dec. 4 send out Christmas letter No. 1. Enclose your booklet.

19—Dec. 11 send out another Christmas letter. Enclose your booklet.

20—Dec. 18 send out another Christmas letter. Enclose your booklet.

21—Dec. 20 mail a Christmas card. These cards should be ordered about November 15, the envelopes addressed as soon as the cards are received, the stamps affixed and the whole thing made ready to mail so it can be dumped in the mails five days before Christmas. In case you have no cards in view Motor World will provide them. *Cards and prices are shown on page ??.* You should also consult the classified and other advertising pages in this issue for Christmas cards. You should be able to get good service from any good card company.

22—In November order some holiday wrapping paper, with green leaves, etc.

23—Order some wrapping ribbon or cord, to make parcels look Christmasy.

24—Select a good line of holiday goods advertising inserts and slip one into every outgoing letter. Use something of the same sort in every parcel but NOT in those sold for gifts, unless the gifts are to be unwrapped.

25—Nov. 30 hold a meeting of the whole organization.

26—Talk modern merchandising and service, emphasize courtesy and the Christmas smile, teach the sales force how to suggest goods that are not asked for.

27—*Ask for suggestions.*

28—Give a demonstration on how to sell Christmas goods. a—Remark about Christmas shopping. b—Show something. c—Try to make a sale. d—Always give buyer one of those Christmas gift booklets. e—Always wear a Christmas smile.

29—Hold meetings every four or five days along the same lines.

These Christmas Cards

can be secured from Motor World imprinted with the name of the dealer. In some cases, the colors are red and green, in others red and black. The sizes are practically those shown and the price of the cards includes envelopes for mailing. How many do you want?

A Merry Xmas

TO you we extend the greetings of the season, and all the happiness that goes with it.

For ourselves, we desire more and more to merit, in our service, your continued friendliness and patronage.

The Albion Garage
10 Albion Square

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How to Sell Wire Wheels

(*Continued from page* 11)

3—One week later send letter No. 2. (*See page* 43.)

4—One week later send letter No. 3. (*See page* 43.)

5—Select what you consider the best half dozen or dozen prospects and make personal calls on them.

6—Use advertising inserts in all outgoing mail.

7—Whenever you get in touch with a prospect suggest to him also that repainting will work wonders with his car. *The subject of painting and overhauling is taken up elsewhere in this issue.*

How to Sell Truck Attachments

COUNTLESS business men have been waiting for a cheap form of motor service vehicle. They have not wanted to pay for a truck, but they are good prospects for truck attachments which can be hitched onto a passenger car and make it into a truck at small cost. These attachments have sold well. They will sell well for YOU this winter if you simply push the business a little. They represent extra profits. Go after them.

The Selling Plan

1—Get the agency for the attachment best suited to your field.

2—Get from the manufacturer literature describing this outfit. Insist that some of it be of a size that will fit your business envelopes.

3—Train a salesman in truck work. Read this paragraph in the story devoted to selling trucks in this issue.

4—Develop to a science the attaching of these truck units. Find the shortest, cheapest way to do the job well. Don't waste money on this end of the job.

5—Compile a prospect list. For classes of trade to go after, see the lists in the stories on selling trucks and on selling trailers. These should be classified into men who own—

a—Fords.

b—Other cheap cars.

c—Horses, and no cars.

Have a different colored filing card for each class. Then, when you wish to concentrate on Ford owners, you can take the Ford cards and not waste your letters on the whole list.

6—Write Truck Attachment Letter No. 1 to Ford men. (See page 45.)

7—Call on your best prospect and try to sell him. Then on the next best, etc.

8—One week after Letter No. 1 send out No. 2. (See page 45.)

9—One week later send out No. 3.

10—As inquiries develop follow them up personally.

11—Your sales approach in case a man has not expressed interest and asked you to call on him may be something like this: (The figures used are not the ones you will use. You must use those that fit the particular unit you are selling.) "Would you like to make your Ford worth $700? Would you like to make it a profit earner, a real working piece of machinery? You will be interested then in the Blank Truck Unit. Briefly, this is what it does: It makes a Ford into a one-ton truck at slight cost, and a one-ton truck costs from $700 to $1,000. It gives you a $700 or $1,000 truck at a fourth or a third the price of such a truck. It prolongs the life of your car—makes it serviceable long after you would have discarded it as a touring vehicle. Furthermore, you KNOW what it costs you to run your car, therefore you don't have to speculate on what it will cost to run the truck. All we do is put a new back end on your car. The front remains the same."

12—If you have no unit for demonstrating, ask the prospect to visit the salesroom.

13—If you have one in operation, show him what it can do. Carry one of his own loads for him.

14—If you have some in operation, get users to endorse it verbally for you. Ask them to call up the prospect and tell about the device.

15—Ask the prospect what style of body he would prefer.

16—Ask him what day would be best to have the attachment made.

17—Present the contract and make a mark where you want him to sign.

18—Get a deposit.

19—Call for the car on the day specified. Better have this done by the man who made the sale. Get the car quickly but courteously and beat it.

20—Deliver the outfit as soon as you can.

21—Keep an eye on it to see that it gives satisfaction.

22—Get a testimonial letter.

How to Get Vulcanizing Business

PROBABLY every tire in town needs something done to it. Many of the cars will be laid up this winter. This will give you a fine opportunity of working on them.

Operate as Follows

1—Establish a vulcanizing department.

2—Install vulcanizing machinery.

3—Get a capable man who, besides vulcanizing, can do general work in case he has spare time.

4—Provide an accurate record of his time so you may be sure you are making money.

5—Arrange a good delivery-and-call system and keep your eye on it. Make sure your delivery man is a gentleman.

6—List all the owners in town. Send vulcanizing letter No. 1. (*See page* 43.)

7—A week later send No. 2. (*See page* 44.)

8—A week later No. 3. (*See page* 44.)

9—Make personal calls within a convenient or prosperous looking area.

10—If personal calls prove successful, make this the principal part of your vulcanizing business.

How to Sharpen Skates for the Kids

DID you ever stop to think that there are a lot of boys and girls in your town who like to have their skates sharpened? And did you ever stop to think that your shop is a fine place to have this work done? And did you ever stop to think what a fine piece of winter business this would be for you?

Here's How to Do It

1—Instruct a shopman in this work until he thoroughly understands it and can do it rapidly.

2—Do a couple of jobs to make sure of what they cost you and the price that you must charge plus the commission of about 20 per cent.

3—Ask the principal of your school or schools to post this notice on the bulletin board: "WANTED—BOYS WHO WANT TO MAKE EXTRA MONEY

(*Continued on page* 16)

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Poof! I Should Worry



The plans in this Winter Business Number—plus your own energy, action and spizz—will make Winter Profits for YOU

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How to Sharpen Skates

(*Continued from page* 14)

AT THE SAME TIME THAT THEY GO TO SCHOOL. CALL AT THE MODEL GARAGE AFTER 4 P. M."

4—After you have secured several boys have them all come down at 4 o'clock some day for a meeting.

5—Tell them of the great future in salesmanship and that even if they never become salesmen the experience they gain will help them in anything they undertake. It will teach them to be progressive, to meet people, and will give them a first insight into business. It is as much a part of their education as school books.

6—Tell them to canvass the school and locate as many sharpening jobs as they can, which they are to bring to you, call for after they are finished, deliver and collect.

7—The sales story they will use is that with sharp skates one can skate better, faster and safer and that it is better to have skates sharpened in a high grade shop by a good man than by a botch mechanic.

8—Keep a record of all jobs received, the time they should be called for by the boys, and make sure that the young salesmen take up this work, and make sure that your business grows, which will depend on proper effort.

9—The price you will charge for this work depends upon what your experimenting shows it costs you and what profit and commission you must add. You probably will find that there are skate sharpeners in basements and in small shops that can underbid you and you must instruct your young salesmen to emphasize the point about being better for the skates to have them done in a good shop by a good mechanic who knows his business.

How to
Sell Trailers to the Whole Town

EVERYBODY wants a motor car—the butcher, the baker, the plumber, the carpenter and everyone else. Lots of them buy a motor car for touring purposes and some of them try to use the car for carting supplies around. Others buy a car and use a slow-going horse for delivery work.

How much better it is to have the car and let it also be a delivery wagon without making a mess out of the car by using it as a work cart. The answer is simple—BUY A TRAILER. When the car is used for touring it's a car. When there is need for delivery work Monday morning all that is necessary is that the trailer be hitched on. And there you have a complete delivery outfit that is comparatively cheap, serviceable and capable of anything.

There is big money to be made in trailers. They are a real war-time economy. They are YOUR winter-time opportunity.

1—Get the agency for a good trailer.

2—Get some good literature describing the outfit. The manufacturer should be able to supply this. Included in the literature MUST be some that is of a size that can be mailed in your regular business envelopes.

3—Buy a demonstrator.

4—Hitch this demonstrator to one of your cars.

5—Put a 3 ft. high sign on the trailer, cloth or wood, saying: *"A car and a truck at the same time,"* or *"Make your car earn its keep,"* or *"Modernize your delivery service,"* or *"Speed up your delivery service."* Have your name and address and the name of the trailer conspicuously displayed at the bottom of the sign.

6—Put a load in the trailer now and then just to show that it can carry a load. This load should be something that shows up big and not an inconspicuous load, such as lumps of lead or iron.

7—Put some literature in your car. Large literature that cannot be mailed is excellent for this purpose. Every time you get a chance hand a piece of literature to someone who seems interested.

8—Draw this trailer everywhere you go.

9—Make a prospect list, getting the names from the classified section of your city or telephone directory. If there is no such classification put down as many names as you can think of in these trades:

Possible Trailer Users

Florists	Hardware	Laundries
Butchers	Plumbers	Fruiterers
Bakers	Milliners	Furriers
Grocers	Shoes	Glaziers
Cleaners	Stationers	Printers
Dyers	Contractors	Restaurants
Carpenters	Dairies	Upholsterers
Painters	Clothiers	Liquors
Dept. stores	Confectioners	Newspapers
Furniture		

10—Try to sell one trailer in each trade. For instance: While the one trailer you have sold to the grocer is working you can be selling one to a contractor, and while you are working on the contractor the grocer's trailer will be advertising itself among other grocers. Then, after you have sold to a grocer, a contractor, a baker, a milkman and a florist—*about five trades*—go back to the head of the list and try to sell another to the most likely looking grocer and go on down through the list again. In this way you make the trailers help sell themselves. If, however, you have several good grocer prospects in hand sell them rather than jumping to another trade.

11—Start on the grocers, as they are likely prospects.

12—If the grocer has no cars at all offer to pick him up a good used car, which will serve as both a Sunday car and a week-day trailer-hauler.

13—As a starter, send to your list of grocers Trailer Letter No. 1. (*See page* 42.) Enclose a return card, saying:

"Will you please have one of your trailers at my place of business at (time), (date), ready to take out a load of goods. There will be about ——— orders. I understand that no obligation attaches to this request."

14—Five days later send Trailer Letter No. 2. (*See page* 42.)

15—Five days later send Trailer Letter No. 3. (*See page* 42.)

16—In calling on a grocer, have prepared beforehand a body of about 3 tiers in which to pile baskets. Make sure this is properly constructed. *If the baskets shouldn't fit or there should be any hitch in loading and unloading it would hurt the sale, no matter how good the trailer.*

17—If you get a request on a return card do as requested. If you don't get any requests, start making calls on grocers, always drawing the trailer with you, and make an effort to arrange a demonstration. Excessive demonstrating may be necessary while you are breaking into the business. Once you get started you can cut it down greatly.

18—Drive the car yourself and help the grocery boy deliver the load in order that the job may be done as rapidly as possible.

19—Make a friend of the grocery boy and get him enthusiastic over the trailer.

20—Find out from the grocery boy whether the store has a system of load-

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ing so the last order to be delivered is at the back of the load. Watch to see if he has any difficulty finding the baskets as he wants them.

21—If the loading seems to need systematizing tell the grocer you have been wondering if a system couldn't be figured out so the time of the delivery boy could be cut down a lot. Ask him if he would care to see if you can work it out. Be diplomatic about it. *Don't tell him he's all wrong.* Just sort of suggest things. If he says Yes, suggest this plan:

Let us assume the trailer has 3 floors and that each holds 9 baskets, 3 each way. On a card have printed a diagram, or mark it with a pencil inside the cover of a show box. Have a big square for each floor and smaller squares for the positions of the baskets. As the load is put in let the loader, as nearly as he can, put the last basket on the route at the front of Floor 1 and work backward on Floor 1, then do the same on Floors 2 and 3. At the same time let him jot down in the load diagram the name of the customer or the street number. If the boy watches this chart he won't have to retrace his steps for skipped deliveries. By this means the load and chart could be handed to the boy and he could start at once, going to the back-end basket on Floor 3 and working right through the load.

22—Cite the difference in time it takes to use the car and trailer as compared with the horse.

23.—Ask certain questions, such as: "Average number of orders per load?" "Style of body that would be preferred?" *If the grocer will state a preference he is thinking seriously on the subject.* Ask him what color he prefers or style of lettering on the body.

24—Offer to take charge of the body building, offering to submit plans and drawings before work is begun.

25—Ask for deposit to cover the cost of the body.

26—Leave promptly but courteously. Don't hang around too long.

27—*Cash the check at the bank at once.*

28—Operate along similar lines with other tradesmen.

29—Write to Motor World about the success of your effort.

How to
Sell Fire Extinguishers

THERE are hundreds and thousands of spots in cars, homes, barns, garages, stables and elsewhere where little fire extinguishers ought to hang. They may some day save thousands of dollars; they may save lives.

Do you know of a man who will deny the safety element in one of these little fire extinguishers? What would one be worth if it were handy when a little blaze starts in a barn? It might save a year's crops. Might one not save lives if it were handy in the kitchen when the blaze first starts?

The first ten seconds of a fire are the most important period of the blaze. If quick work is done early there is no estimating what damage may be prevented. That's why firemen hurry so. They know the value of early, quick work. With these arguments the sale of fire extinguishers should be easy. You don't have to sell them to car owners alone. Sell them to everybody.

Use This Plan

1—Order from your jobber or manufacturer 2000 advertising inserts that will fit your business envelopes, advertising an $8 or $10 fire extinguisher.

2—Order one or two window displays, which are, like the inserts, furnished free by the manufacturer.

3—Order 100 fire extinguishers from your jobber.

4—Make sure the fire extinguishers do not arrive weeks ahead of the window displays and literature. Specify that this must not be the case, else you may have your money tied up in stock without the materials with which to sell it.

5—When everything is in hand erect your window display in your street accessory window. If you haven't a window, build one NOW. You should have done it long ago.

6—Put a fire extinguisher display in your show case.

7—Put a display in your runway cabinet if you have one. If you have none erect a 14x22 sign alongside the runway, saying: *"Ask the man in the office about safety from fire."*

8—Put display cards in your displays, about 6x8, 8x10 or 10x12, depending on how much room there is and how far away the observer may be. On these put:

$1,000 worth of safety for $10
Stop the fire in the first 10 seconds
Make your home safe from fire
Avoid fires in your car
Put one of these in your kitchen
Is there one of these in your garage?
Put one in your barn
Buy $1,000 for $10.

9—When a man asks about an extinguisher or you get a chance to talk about one talk as follows, of course, putting the story into good conversational form. The facts are these:

"Fire is the union of materials with the oxygen of the air at a high temperature. The extinguisher shoots onto the burning material a chemical which is by the heat turned into a cloud of gas, in which there is no oxygen. There being no oxygen the fire ceases. (The fire is smothered as if by a blanket. In fact, it is a blanket —of gas.) This is far superior to water because the gas spreads, whereas water extinguishes only where it strikes. Also, a small amount of extinguisher fluid is equal to a large quantity of water. The stream also can be continuously played, the extinguisher is easily carried, works quickly and is always handy, whereas carrying water is some job.

"The first ten seconds are all important. A few squirts from a fire extinguisher in the first ten seconds are worth several fire departments a half hour later. There should be one in the kitchen, in the car, in the garage, in the barn, in the stable and many other places. Lower insurance rates are often obtainable with this protection."

This is in substance the story to use in selling the goods.

10—Make a list of prospective buyers. You should already have such a list. *You should ALWAYS have a prospect list in your office for such occasions as this.* It should be, for this campaign, about 500 names. But even if you haven't 500 names, use what list you can get.

11—Send to this list Fire Extinguisher Letter No. 1 (*see page* 42) as soon as you are all set, the displays up and the goods ready for sale.

12—Five days later send Fire Extinguisher Letter No. 2. (*See page* 42.)

13—Four days later send Fire Extinguisher Letter No. 3. (*See page* 42.)

14—As soon as the inserts are received begin slipping one into every piece of mail that goes to folks in your territory.

15—If your newspaper rates are low you might use an ad or two.

16—If the stock isn't moving by the end of the first week or ten days start a salesman out canvassing house to house in well-to-do sections.

17—As an added effort you might ask

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the principal to post a notice in the high school asking for 10 live salesmen for special work. Give these boys a sliding scale running something like this: 8 per cent on 1 sale, 4 per cent on 2, 6 per cent on 3, 8 per cent on 4 and 10 per cent on five. Give them the sales story, with a lot of enthusiasm, and turn them loose on their friends and relatives.

18—Consult with your jobber's salesman when he comes to town for ideas on meeting local problems in the campaign. He ought to be able to help out a lot.

19—When the customer hesitates at the refilling expense, say this: "When you have had occasion to use this, Mr. Customer, you will consider the refilling the best investment you ever made—and you may have to use it any day."

20—Make a statement of costs and profits on this campaign and send it to Motor World.

How to
Sell Winter Clothing

EVERY car owner buys coats, robes, gloves, caps and other winter clothing. Much of it he buys in clothing stores, but is there any reason why you shouldn't sell it to him. He is patronizing your place of business all the time, and you certainly can sell some if you go at it right and make an effort.

The Plan

1—Get the catalog of a clothing manufacturer or wholesaler.

2—Unless you are in a town that is so small that the investment is not justified, get one or two samples of robes, coats, caps, etc.

3—Get some good pictures of coats, robes, and the other goods you propose to sell.

4—Get some displays from the manufacturer. These may include fixtures or merely instructions on how to make display windows.

5—Display this clothing heavily in the windows at once. Do not wait until cold weather is at hand before you display the goods. It has been proven in practice that if you want to sell winter clothing in December you must put it on display now.

6—Always have clothing displayed until the middle of the winter, at which time you can put in your spring clothing.

7—Included in the literature you secured from the manufacturer is some that will fit your business envelopes. *Keep slipping these inserts in all your outgoing mail.*

8—When a man seems interested in robes take out one or two or more robes, let him handle them, tell him of their warmth and durability during the cold months, and let him feel the goods and get in close contact with them.

9—If he seems interested in a coat, don't merely show him a coat. Immediately grab one up and slip it on him the same as clothing clerks do when you go into a clothing store.

10—Be persistent. It is not easy to break into the clothing business, but it can be done, and once you get started the business grows.

How to
Sell Ford Starters

DID you ever crank a Ford? Try it! Then you'll understand why Ford starters are such easy things to sell. Look out the window! How many Fords can you see? And every one of them is a prospect for something—most of them for a starter. It's easy. Many of them will come in and ask for starters and nearly all the rest will buy starters if YOU do the asking.

Do It This Way

1—Get a list of the Fords in your territory.

2—Send Starter Letter No. 1. (*See page* 45.)

3—One week later send Letter No. 2. (*See page* 45.)

4—One week later send Letter No. 3. (*See page* 45.)

5—Use advertising matter of a mailable size in your outgoing mail.

6—Whenever you see a Ford without a starter talk to the owner. Try to sell him.

7—Train every member of your organization to do the same thing.

8—Train some of your men in installing starters so you can do it quickly and efficiently.

9—Equip a demonstrating car with a starter. Put a sign on it and drive it around town on errands.

10—Get testimonial letters and use them in your outgoing mail.

11—*When you get a Ford for starter installation see if there isn't something else you can sell the man.* Now that you've got him started he is in the right frame of mind to buy a lot of things, for ever since he had the car he has been thinking of the things that aren't on it.

How to
Establish An Oil Service

AS a general rule, car owners buy oil almost anywhere, but there is no reason why you cannot corral a large part of this business. All you need to do is to make it easy for the car owner to let you sell him oil.

Here Is the Plan

1—Get from an oil company or the jobber from whom you buy oil information on its method of furnishing supports for 15-gallon drums.

2—Get rates on an oil contract for a certain period and contract for what you think you can sell.

3—Make a list of owners who have garages in the back yard.

4—Solicit their business. Tell them your service is convenient, cheaper, and that there is no worry. They always have oil.

5—Have a contract which provides that you shall keep the owner's garage supplied with oil.

6—Keep a check on his oil and be sure to replace his drum when empty.

7—Store sufficient oil so that you are always able to supply customers.

8—Deliver promptly.

9—Do not permit the drum to go dry and thereby give the owner an opportunity to buy oil somewhere else.

10—Have courteous and careful help.

11—In connection with your solicitation send oil letter No. 1 to the list you compiled in paragraph number three. (*See page* 47.)

How to
Sell Racing Bodies

THE owners of many old cars, especially runabouts, are prospects for racing bodies. The addition of a snappy speed body makes an old car look like a new car of distinctive make.

Here Is a Plan

1—Get a list of cars of 1914 and older. Mostly runabouts.

2—Send racing body letter No. 1. (*See page* 43.)

3—Send letter No. 2 with a picture. (*See page* 43.)

4—Send letter No. 3 with another picture. (*See page* 43.) These pictures should be of a small, mailable size and often can be supplied by the manufacturer.

5—Fix the used car which you had trouble selling because it was so old with one of these bodies and use it as a demonstrating sample to show prospects how it looks. If you get a chance to sell it, sell it and fix up another one.

6—Photograph the old car before it is converted so that you can show what a wonderful transformation was made—and at such a small relative cost.

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The Hand That Helps



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How to

Sell Electricity to the Farmer

THE farmer is buying cars, he is putting in bathtubs, he is having a telephone installed, he has a mailman at his door every day—and he is getting sick and tired of carrying an old oil lamp in his hand when he goes to bed. He can't read the daily paper—and he has one—in comfort. His wife is weary of caring for the old oil lamps. All that is necessary is that *you* show the farmer how easy it is to have ELECTRICITY ON THE FARM. And the dealer who starts this "show-the-farmer" business will provide an extra funnel through which glittering profits will trickle into the cash drawer.

Here's How to Do It

1—Get in touch with the manufacturer of a good farm lighting system and get the agency.

2—Scout around the country and compile a list of farmers who are eligible prospects for a farm lighting system. Call a meeting of your entire organization and get from them additional names and information.

3—Put these names in a card prospect file for follow-up work.

4—Ask the manufacturer of the system every bit of work that is necessary in installing the system.

5—If you haven't an electrician in your employ who can wire houses get in touch with a good electrician in your town and make a working arrangement whereby the two of you can co-operate on this work. Make it easy for the farmer to have the job done. Get complete data as to cost of installations, etc. Be prepared.

6—Get a trailer about 72 x 42 in., carrying about 500 lb.

7—Put a brace rod at each end so the trailer will stand alone, just like a banana peddler's cart.

8—Fasten your outfit into this trailer as shown in accompanying illustrations of the method employed by the Western Electric Co. in Kansas City.

9—Have a fan, flatiron, cluster of electric lights, bread toaster and other devices so you can show what the system will do.

10—Now you're ready. Send this letter to your list so it will arrive at the end of the week. The farmer can read it Sunday.

Dear Sir:

When you sit down to supper to-night think what a fine thing it would be if your meal were illuminated by electric lights!

And when you go to bed think how handy it would be if you could push a button on the wall and have your way lighted up in front of you!

It would be quite a job, wouldn't it, to have electricity run out on wires from town? But you don't have to get it that way. We can bring it out in our car and leave it with you so it will light you day and night the year around.

And it will heat your flatirons, run an electric fan, toast your bread, run the cream separator and be an all-around handy man at more jobs than either you or we could think of at one sitting.

Watch the mails for the next few days. We're going to send you something that tells all about this electrical handy man who does all this work for you.

Very truly yours,

11—At the end of the next week send a booklet or some literature describing the outfit. With it send this letter:

Here is the story of the electric lighting and power outfit we said we were going to send you. Look it over carefully.

It is a simple system and inexpensive to install and operate.

In installing it you would want to know where to put it and how to put in the wiring, etc., but we've taken care of all that. We have figured carefully on everything you'll want to know.

Here is our proposition: If you will return the inclosed card saying when you will be best suited as to time, we shall be glad to drive to your home with one of these outfits in our car. It is easily carried. It isn't very big.

You can then see just what the system is, what it will do and how it works. After you have seen it you don't have to buy it unless you want to. But we want you to see it. Just drop that card in your mail box and we'll send the exhibit to your home.

(Signature)

With the letter is a return postcard, printed or typewritten. It says:

Jones & Co.:

I shall be pleased to inspect your farm electrical outfit at my home, ..., at ..... p. m. or a. m. My understanding is that there is no obligation attached to your call.

Name.....

12—If he doesn't reply, visit him, or, if you are loaded up with visits, send him additional letters.

13—When visiting the farmer operate as follows: Drive into the yard and stop the car near the house.

14—Knock at the door. If the farmer's wife only is in the house, tell her who you are and ask her if she got the booklet you sent regarding the system. Ask her if she won't slip her coat on (provided it is chilly) and step out to see the outfit. Then leave the door quickly as though she had said she would come out. Don't wait for her to say Yes or No. In most cases she will come.

15—In case you believe the farmer, too, is in the house, ask them both to come out.

16—Go to the trailer and uncover it. Set up the apparatus and start it going.

17—Make sure beforehand that you are going to have current promptly.

18—Show the wife how the household appliances operate. Ask her about her ironing. Show her how she can iron on the front porch in hot weather. Show her how she can run a fan in the kitchen and at the dinner table. Toast a slice of bread for her, a loaf wrapped in a napkin being part of your equipment.

19—Have wire enough so you can carry the lights into the house and demonstrate their desirability.

20—If the farmer is within call get him as early in the demonstration as you can. If there isn't too much snow and

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he is in the fields, unhook the trailer and drive out after him. It is best to hold the demonstration near the house if possible.

21—Frequently ask both farmer and his wife such questions as: "Don't you think that is very convenient, Mrs. Smith? Or Mr. Smith?" Study their replies.

22—When they seem nearly sold, say: "It seems to me here would be a very fine place to put the outfit." Walk to the point you indicate and if necessary ask them to follow you. Then tell how the wiring would be run, etc. Frequently ask such questions as: "Would you prefer it this way or that way?" If the farmer or his wife takes an interest and expresses a preference you have practically sold him or her.

23—If one seems sold and the other not, try to find the hitch and play on it.

24—When ready to close say: "How soon would you want the system ready for use?"

25—If the farmer names a date, open your book and date him up.

26—Fill in a small sized contract with the necessary data and make a little mark where you want him to sign as you hand him the book.

27—After he signs, pack up and get away as quickly as you can without being discourteous. Don't hang around. He may change his mind.

28—If necessary, you may leave the outfit at the farmer's door so he can use it for 24 hours and see for himself how it works. In case you leave it make sure there are flatirons, toaster and other things that appeal to the woman.

29—If there is to be a Grange meeting some evening, string wires around and light the house. You'll get more advertising that way than you could get in almost any other. But make sure you fix things so there will be no hitch or your advertising may be of the wrong kind. The salesman might secure an invitation to the meeting and find some likely prospects.





Here's How to Fit Up the Trailer

THESE photographs are by courtesy of the Western Electric Co., of Kansas City, which is planning to sell many of its farm lighting systems to farmers this fall and winter. These pictures show well how a demonstrating outfit may be fitted up. It is inexpensive to construct, inexpensive to operate and tells the story to the farmer better than a million years of sales talk. Hitch up one of these affairs and get out into the country and corral some Winter Profits selling electricity to the farmer. He wants it. He is waiting for YOU to sell it to him





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How to
Sell Enclosed Cars

FOR a long time the more progressive men in the industry have been saying the enclosed car was a comer for winter and all-year-around driving. There were doubters at first. But some progressive dealers went after enclosed car business and have made a lot of money at it. This thing is certain: ENCLOSED CARS ARE GOING TO BE SOLD. The dealer who gets there first with his line of enclosed cars and fills the town with them is the dealer who will win out, for if the public sees a dozen of one car running around it is going to believe it must be very popular and a good buy. Every dealer should go after this business. The public hasn't bought more enclosed cars because dealers and salesmen have not pushed them. Go after this business. Discover for yourself what a pleasant work it is, what class it will add to your business and what a difference it will make in your winter profits.

The Enclosed Car Plan

1—Sell yourself on the enclosed car idea. Get so thoroughly sold that you want to call the man a darned fool who doesn't agree with you. Get enthusiastic.

2—Hold a meeting of all your organization. Bring everyone in, not just the salesmen. Give them a hot talk on what Winter Business is, that you are going to sell enclosed cars and that every man must help. Cover these points:

a—The Big Winter Business Idea.
b—Emphasize that it may be NEW but it WORKS.
c—Need for a new attitude on the part of every man.
d—It CAN be done.
e—WE'RE going to do it.
f—YOU must be sold on the idea.
g—If you can't co-operate you are worthless as a member of the organization.
h—We are laying out a plan.
i—We need your help.
j—We want Winter Business suggestions right now. Jot down every man's suggestion. Don't throw cold water on any suggestion. Encourage the men to speak freely. You may discover that you have some wonderful men hidden in your organization.
k—Go over your sedan thoroughly in the salesroom in the presence of the whole organization and jot down all the sales points anyone can think of.

3—Hold another meeting the next day. Go over the points again and add to them.

4—Draft a standard sales talk so you will be sure no sales point is skipped. Build this talk along the following lines:

a—Show the whole car in a side view at a distance of 25 or 30 feet.
b—Mention briefly the motor and other mechanical features. You are selling an enclosed car body and comfort, not mechanics.
c—Set prospect on rear seat and close door.
d—You turn a front seat and face prospect if seats turn.
e—Call attention to interior features. Overlook no luxury details.
f—Set prospect behind the wheel.
g—Call his attention to the driving comfort in a sedan.
h—Ask him, and his wife if she is with him, to sit in the back seat again while you take a front seat, facing them.
i—Ask what date they would want the car. Fill in the date on a contract.
j—Indicate that the demand is strong, but that you believe you can get the car by that date if the order is placed now.
k—Hand contract and pencil to prospect, indicating with a mark where he is to sign.
l—Get a deposit.
m—Courteously but expeditiously get them out of the car and out the door. Concoct some business excuse if necessary.
n—Cash the check as soon as possible.
o—Deliver the car as soon as possible.
p—Get a sedan-comfort testimonial letter.

5—Have everything around in the salesroom and office. You have asserted to your organization that you are going to work on a different plan, a new plan. Therefore, to impress this New idea still more strongly move everything around. Make a better arrangement.

6—Hold a drill on How to Sell a Sedan.

7—Lay out an advertising campaign for October, November, December and January. *See pages* 29, 30 *and* 31 for how to do this.

8—Begin ads at once.

9—Get newspapers to co-operate strongly with winter stories. Get physicians to boost winter motoring and winter air in newspaper interviews.

10—Have salesmen cull their prospect lists for sedan prospects.

11—Get names of all owners of cars over $1,200 and $1,500. List them.

12—Send Letter No. 1 a couple of days after your first ad appears. (*See page* 45.)

13—A week later send Letter No. 2. (*See page* 46.)

14—A week later send No. 3. (*See page* 46.)

15—Continue this mail campaign, sending letters and literature and pictures of the car about once a week.

16—Keep accurate check on returns from the mail campaign. KNOW what part of your effort is getting results.

17—Put on a sales contest once a month all winter (*see page* 24) on How to Run a Sales Contest.

18—Cash in on the Christmas Idea. (*See pages* 12 *and* 13.)

19—Put on an enclosed car tour. Write and telephone to a lot of enclosed car owners and get their acceptance. Tell them the cost, which will cover a ticket to a dinner dance at a hotel about 20 or 30 miles out!

a—Drive out late in the afternoon.
b—Have dinner.
c—Dance.
d—Home in the evening with interior lights on.
e—Speed to be not fast.
f—Prizes for dancing, worst and best signatures on the hotel register, sportiest necktie, etc. Make the party a lot of fun. See to it that it is kept lively DON'T make it a booze party.

20—Keep a sedan in your window with the door open and interior lights on. Make it look cosy and comfy. Put autumn branches, evergreens, etc., around the window from time to time. Illuminate the sedan by top and bottom window trough lights.

21—Ask the department store people to let you use a show window once in a while.

22—Rent an empty downtown window or store, put a man inside with a desk and telephone, literature and contracts and make the place bright and inviting. If it is a long deep store cut it off short with a curtain, making the front into a small salesroom. Put signs in the window inviting people to come in This salesman should be on duty from late in the forenoon until the evening crowds have gone. Almost any landlord would be willing to rent an empty store on a month-to-month or week-to-week basis.

23—Lay plans for handling time payments.

24—Use good enclosed car inserts in all outgoing mail.

25—Some manufacturers are planning active dealer co-operation this winter in enclosed car sales. *See if your factory has such a plan.* If so take the fullest advantage of it.

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How to
Find Car Prospects
and
How to Make a Prospect List

IF you haven't a real, red-hot, live, profit-producing prospect list there is a cog missing in your business. Prospects are future buyers. *They are the seeds from which your crop of profits grows.* So how can you have a crop of profits if you don't use good seed?

A prospect is a man who is eligible as a buyer because of his needs and financial status. He ought to have, or should want, the goods and is able to buy them. All that remains is for you to get him to act. On this basis every man with money enough to buy a car is a prospect unless he is in jail or an insane asylum or lives in some section where a car can't run.

On the same basis every man who has run his car a year is a prospect for repainting. Every car owner is a prospect for tire business and oil. Every workingman is a Ford prospect. And so it goes. Every man who CAN USE your goods and who is able to pay for them IS A PROSPECT. In many stories in this issue is told how and where to find prospects.

How to Find Car Prospects

(Motor World wishes to thank H. H. Brooks, assistant sales manager of the Nordyke & Marmon Co., for many of the suggestions that follow.)

1—Get a list of the officers and directors and the due dates of dividends of the large industrial corporations in your section. The principal corporations are listed in *Moody's Manual.* This manual may be at the library or you probably can find a copy at your bank. Dividend date is a good time to talk to this class of prospect.

2—Get from the county records a list of mortgage loans and the due dates. Get to the prospect just ahead of the due date.

3—List all your owners. If you've kept them satisfied they'll buy again.

4—List all owners in your own price class.

5—List all owners in the price class just below and try to pull them up. These should be carded specially and be given special sales work.

6—NAMES OF ALL THE OWNERS IN YOUR TERRITORY CAN BE OBTAINED FROM LICENSE LISTS. IF YOU HAVE NOT ACCESS TO THE RECORDS THERE ARE LIST COMPANIES THAT SUPPLY THIS SERVICE, OFTEN LOCATED AT THE STATE CAPITAL. This applies through this issue to all points where it says: *"Get a list of such and such owners."* This is the way they are obtained.

7—Have a member of your organization call on your owners about once every two or three months. Keep him friendly. Ask him for names of prospects.

8—Offer to each employee, not a salesman, a prize of $5, $10 or $15 for each prospect name turned in that results in a sale.

9—Get acquainted with chauffeurs in your vicinity. Talk with them.

10—Procure and keep up to date a membership list in golf, country and other clubs. Clubs often print this data in booklet form.

11—Watch the newspapers for stories of persons who have had good fortune.

12—Automobile fires and accidents create new prospects.

13—Talk with livery drivers and get the names of people who use rented outfits frequently and who do not own cars.

14—You and your employees watch the old cars on the street. Get the license numbers. You can tell by looking at a car whether the owner needs a new one.

15—Inclose in your circularizing cards on which you request that names of prospects be returned to you. Stamp the cards.

16—Newspaper advertising will develop prospects.

17—*Conversation with anyone anywhere may develop a prospect.* Make it a point to pick up a conversation with three strangers a day, let it be known who you are and, if the stranger proves friendly, ask for prospects if you feel you can do so. Maybe the stranger is a prospect.

18—Circularize aggressively but in a dignified way. Send appropriate literature.

19—Watch the society columns. Debutantes, returning vacationists, brides' parents, new arrivals, etc., are excellent prospects.

20—When making delivery ask the new owner for names.

21—Keep friendly with garagemen. Ask them which customers need new cars.

22—Drive through your territory and look things over. You may think of half a dozen on a half hour's drive.

23—Talk to your family once in a while. Generally you can get a lot of good information here.

24—Get from the Bankers Directory, which you may find at the library or in your bank, the officers of banks.

How to
Make a Prospect List

1—Put each name on a card. If you have no other cards use a common 4 x 6 in. card such as any stationer can sell you. It is best to have a special portable drawer in which to keep the cards.

2—A prospect card which Motor World will sell in quantity *is shown on page 90.*

3—With each name put the house and

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business address and telephone numbers, make of car owned, if any, model he seems interested in, and such data.

4—Every time a call is made note on the card just what happened.

5—When dating the prospect up for a new call do not at random say 5th, 10th or 15th of the month. Have some reason for the date you chose. MAKE A DIRECT APPOINTMENT WITH HIM IF POSSIBLE.

6—It is well to carry a date book in your pocket so that you will not get any one day so full that you can't do the work.

7—The best cards to use are those with 1 to 31 across the top. You then can set little tabs on the days of the month and pick the cards out each day.

8—For a small organization one card file is enough.

9—For a larger organization there should be salesmen's files and a master file. The master file contains copies of everything in all the other files and the salesmen must report on all calls, which data are recorded in the master file.

10—For different classes of prospects use colored cards. Thus: Your owners might be blue, Dodge owners pink, Buick owners brown, etc. This will enable you to work on certain classes.

11—As to using the list:

a—Every day act on those marked for that day.

b—Don't let a day go by without working on some of them.

c—Send letters regularly to the whole list.

d—Send literature sometimes in place of letters.

e—Go through the file every three months and transfer the dead ones to a dead file. Don't let the dead ones boost overhead by eating up postage on form letters.

f—Make this file the foundation of your sales work. Never get a prospect name that you don't put in the file and start your sales machinery working on it until it is a dead one or a sale.

How to
Run a Sales Contest

SALESMEN like to sell more cars. You like to have them sell more cars. Both they and you like anything that will help them sell more cars. Contests bring about this result. They keep the men up on their toes, make business hum, make more money for everybody and effect a spirit of enthusiasm and work that makes every salesman a better salesman. You should run a contest at least once a month all winter.

The Contest Plan

1—Determine your scale of points. The cars you want most to sell should be given higher points. For instance, if you want to sell sedans and if you think harder work is needed to sell sedans give sedans a high point rating. That will make the salesmen go after sedan sales. There are various ways of grading. Here is one: Sedans, 100 points; coupes, 100; touring cars, 50; roadsters, 40; used cars, 10 points per $100 provided the sale is at the marked price, 5 points per $100 if at less than the marked price; sales without trades, 50 per cent extra.

2—Select a form of contest. These may be:

a—Speedway track.
b—Aviation race.
c—Skiing race.
d—Skating contest.
e—Football game.

Whatever you select, have a drawing made about 3 x 5 ft. Any good high school boy can do this. Maybe you or some of your men can do it. Have drawn also small 3 to 5-in. pictures of cars or men or airplanes. Have each man photographed. Paste his head onto the car or airplane. In a football contest let the leading man carry the ball. If another takes the lead give him the ball. Let the other chase the leader.

3—Determine from last year's month's work and your own judgment what should be a fair month's work for a good man. Divide the course into points so that it covers a good month's work.

4—Let the men be their own handicapping committee.

5—Select the prize. REMEMBER THIS: *There must be more than a mere money prize.* The men must be given also a chance to win honor and distinction. Therefore, have a cup, watch, ring, trip to the factory, or something in addition to money. You can give money too if you wish. Have the trophy suitably engraved and display it in the office while the contest is on.

6—Post a bulletin board alongside the contest board.

7—Post bulletins each morning, such as: *"They're off! And look at the jump Hones got! After him boys!" "See that man Henry go! Come on, boys! Cut down his lead!" "Look what Williams did yesterday!"* etc.

8—Keep the contest humming. Keep excitement up.

9—Give a dinner when you award the prize. Make the men realize that winning is an honor. *Make the dinner an event.*

How to
Keep Your Garage Full

YOU have space in your garage that costs you money, no matter whether you own or rent the building. This floor space is your money-earner, and if the space doesn't earn a profit it is just the same as a mechanic who draws pay and sits idly on the bench. It is possible to make this space earn money. A selling effort will help. So long as you have the space it is only good business to get something out of it.

The Winter Garage Plan

1—Get your garage in shape.

2—Make it attractive inside and out. Whitewash the interior. Scrub the floors. Replace the broken windows. Let in all the light you can. Make the garage worthy of being patronized.

3—Make a sketch of your floor according to a scale. Lay out certain sections that are best suited for dead storage and those that should be used for live storage.

4—Prepare a prospect list. This should include all the car owners in town.

5—Send out garage letter No. 1 (*see page* 46).

6—Ten days later send out garage letter No. 2. (*See page* 46.)

7—Ten days later send out garage letter No. 3. (*See page* 46.)

8—During October, November and December select special prospects in case you have vacant space and go after them personally and by letter.

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9—Your sales arguments are:

A—A car costs money and should be given care commensurate with its standing as a piece of machinery.

B—Lack of care may cost the owner a lot of money.

C—Your garage is the best place in which to keep the car.

D—The garage is warm and the car will not be damaged by freezing and will always be ready for use.

E—If the car is going in on dead storage, you will jack it up, take the tires off, if necessary, and have the car all ready to run when Spring comes.

10—Advertise in the newspapers. (*See pages* 30 *and* 31 *for suggested ads.*)

11—Endeavor to get in touch with as many club members as possible.

How to
Repair Gasoline Engines

WHO is going to repair all the gasoline engines in your territory? There are tractors, motorboats, motorcycles and other kinds of gas engines. They all need more or less fixing. You are equipped to repair these motors. So what is better as a winter fill-in than to go after this trade? If you get a grip on it this winter it may produce a profit paying department all through the future.

You can get this business if you will.

Do It Thus:

1—Have in your employ a good gas engine man.

2—Make a list of gas engine users. This you can get from oil companies, editors, grange officers, clubs and similar places.

3—Send Gas Engine Letter No. 1. (*See page* 47.)

4—One week later send Gas Engine Letter No. 2. (*See page* 47.)

5—One week later send Gas Engine Letter No. 3. (*See page* 47.)

6—If work is portable take it to your shop.

7—Work on customer's premises only when necessary.

8—Before starting work get a repair order, specifying what is to be done. Leave no loophole for misunderstanding.

9—On this order specify as long a time as possible for delivery.

10—Arrange payment terms definitely. No use doing work unless you get paid for it.

11—Do excellent work so your customers will advertise you.

How to
Sell Motor Trucks

THE war is forcing upon us an age of utility. *Men are thinking less in terms of pleasure and more in terms of practicability and saving.* The truck is in this field. The war is taking the horses. It is demanded greater business efficiency.

Manufacturers are swinging into truck production. The truck is a coming opportunity. Get into the business this winter and make a profit that will take the place of the falling off in some of your regular departments.

Here Is the Way:

1—Get the agency for a line of small and medium trucks.

2—Get a demonstrator, if the truck is not over large and costly.

3—Train ONE man, or more, on truck sales. He should know how to:

a—Analyze a business.

b—Figure costs.

c—Prepare comparative statements.

Sample Comparative Statement

1 Truck (One week)		Horses & wagons	
Fuel and oil	$....	Feed, etc	$....
Tires and upkeep	$....	Shoeing, repairs etc.	$....
Driver	$....	Drivers	$....
Storage	$....	Storage	$....
Depreciation, interest & taxes	$....	Depreciation & taxes	$....
Total	$....	Total	$....
Price	$....	Price	$....
Miles per day	$....	Miles per day	$....
Cost per ton-mile	$....	Cost per ton-mile	$....
Cost saved per day	$....		

4—School service men on handling truck work. Train one or two men if necessary.

5—Get a sufficient parts stock.

6—Plan carefully parts replacement work. You must be able to keep your trucks in operation.

7—Ask factory to tell you what parts are most in demand.

8—Get from the factory convincing sales literature on several lines of business. Get loose-leaf leather-covered book with pictures of trucks in service, and other data. Have data on savings that have been effected.

9—Prepare a prospect file of those:

a—Using horse delivery wagon.

b—Small horse truck.

c—Large horse truck.

This data can be secured by diplomatic treatment of several wholesale salesmen of groceries, a canvass of the city by motor car, a perusal of the city directory and telephoning by the office girl to firms in such businesses as:

Bakers	Hardware dealers
Painters	Contractors
Department stores	Newspapers
Furniture dealers	

10—Plan separate campaign for each class of vehicle. Don't circularize broadside. Keep the 1-tonners in the 1-ton campaign. Find what the man needs and don't try to sell him anything else.

11—Let us illustrate with the 1-ton truck.

12—Send Truck Letter No. 1 with literature. (*See page* 44.)

13—One week later send Truck Letter No. 2. (*See page* 44.)

14—One week later send Truck Letter No. 3. (*See page* 44.)

15—After No. 1 has gone out call on the most likely prospect.

16—In approaching him tell him who you are, state that you wrote him the other day (name day) and say you have some figures pertaining to his business in which he may be interested.

17—If he condescends to look at the figures get him to help you revise them if they need it and get him interested in this analysis of his business that you have prepared previous to calling on him.

18—Keep him at it and the first thing he knows he will be figuring himself into why he should buy a truck.

19—Emphasize the need for economy and the necessity for shaping his business to meet future conditions. He must be more up-to-date and more efficient.

20—When he gets interested and has figured a while ask him about the style of body he would need. If he goes as far as to answer he is pretty well sold.

21—Tell him you can assist in getting body.

22—Get signature to contract.

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How to
Beat Down Winter Resistance

THE car owner and prospect has grown up with the idea that winter is a time to put up the car, to cease all motoring activity until spring and not to buy any accessories, supplies or repairs until the sun comes out in April. Why should he not be broken of that bad habit? Back-country folks didn't use to go to town from fall until spring, they never had bathtubs, telephones, daily papers, or any of those things. They had to get over a lot of old stuffy ideas. And this winter-slumber thing is nothing but an old stuffy idea. What the public needs is a little education, and it is up to the dealers and garagemen to give it.

Here Is the Plan

1—By letter and by telephone call a meeting of car owners at your salesroom some evening to form a Winter Motor Club. Elect officers, draft a brief constitution and by-laws, have small dues, just enough to care for routine expenses, such as stationery and stamps, and get started as a regular club. If there should be a deficit of a couple of dollars, pay it and say nothing.

2—Be an active member of this club. Get other dealers interested in it. See that things are kept moving.

3—For one thing, stage a dinner dance at a hotel or in some town about twenty or thirty miles away. Start early, dance an hour, eat, dance some more, and drive home. Hold these once a month.

4—Give a prize for the best winter-equipped car, the best signature and the worst on the hotel register, etc. The prizes should be winter accessories.

5—Hold an enclosed car tour of this kind. Limit entrance to enclosed cars.

6—Hold a *camouflage* run. Have the cars disguised so they look like the landscape, as is done with artillery in France. Give a prize for the car that fits in best with a certain spot where the judges, you announce, are to be stationed.

7—Get all the garages to boost winter touring by handing out winter touring literature advising owners how cars can be fixed for winter use and by boosting your winter agitation. Call a meeting of all the garagemen and sell them on the idea. Have several people present from each garage. This will boost the garage business.

8—Garagemen should do this also, of their own accord, for what helps one helps another in this line of work.

9—Get the dealers' association to cooperate on this educational work.

10—Print a neat winter motoring sticker stamp and have all dealers use it on all letters. Get the telephone companies and department stores to use them, too. It all helps boost everyone's business.

11—Use winter accessories inserts in all outgoing mail. Hold a meeting of all the trade and advocate this.

12—Run *"Drive Your Car"* advertisements (see pages 30 and 31).

13—Keep in close touch with the newspapers. Let a committee of the trade call on the managers of the papers—not on the automobile man—and point out how the campaign you all propose to conduct will boost business generally, and that it isn't any one individual trying to crab publicity for himself. Sell the manager on the idea and ask him if he won't give support to your plan.

14—Having gotten the newspaper manager's support, keep in touch with the city editors and automobile men on the newspapers. See that they are invited, free of expense, to all your tours and runs, get pictures for them; don't try to hog publicity for any one dealer or car, and fill the papers with the winter motoring idea.

15—When a motorist makes a winter trip, see that the newspapers hear about it. Don't play up the rigorous part. Have the owner tell how he enjoyed it, how invigorating it proved, how comfortable he was able to make himself by robes and heaters, how wonderful the scenery was, etc.

16—Locate a good skating place out in the country and organize a skating party. Take men along to build a big fire and keep it burning. A truck might carry coffee and sandwiches or a kettle of soup. See that everyone has a good time.

17—Talk, think and look prosperity and activity. *Don't let the car owner forget that the first* $2,000,000,000 *Liberty Loan is going to be spent in America and that it is bound to make money plentiful.*

How to
Keep Your Shop Busy

YOU will be surprised to find how easy it is to bring a lot of work into your shop, keep your men and machinery busy all winter and cause the shop to operate at a profit instead of a loss. Acting upon the suggestions given in MOTOR WORLD'S Winter Business number of a year ago, dealers and garagemen made money last winter, where in previous winters they had suffered losses. You can do the same thing. On a page that follows is presented a plan. The next important thing is action on YOUR part.

Take These Steps

1—Whitewash the inside of your shop and even whitewash some of the machinery. It will save time, lost motion and lighting bills.

2—Talk with your foreman about shop equipment. You may find that a new arbor press, bench grinder or a drill press will so widen the scope of your work that it will be a good investment.

3—*Delegate a man to keep the premises spotless.*

4—Systematize your shop work. Make sure you have a competent man in charge and that he is in touch with every job, assuring satisfactory work.

5—Have proper shop forms so that the work goes through all right and you know how much money you are making. (*Several forms are on pages* 89, 90 *and* 91.)

6—Three weeks before your slack season begins get busy.

7—Make a prospect list of all the car owners in your territory.

8—Send out shop letter No. 1 and at intervals of 10 days send out letters un-

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til you see that your shop is working to capacity. (*See pages* 89, 90 and 91.)

9—If there should come a time when the shop is full and you need no more work, send out letters on the sale of accessories.

10—Plan an advertising campaign. (*See page* 30.)

11—Run your ads until February 15, and then let your advertising talk about spring business.

12—Use inserts in all outgoing mails.

13—Solicit car owners personally, if it is necessary to do so.

14—Go after tire work.

15—Go after battery business. Get batteries in, repair them and take care of them all winter.

How Manufacturers and Jobbers Can Help Winter Business

THE manufacturer and the jobber have a definite part to play in keeping the motor trade active throughout the winter months. It is all right that the dealer and garageman be advised to be active and endeavor to get business, but the effort is not 100 *per cent unless it has encouragement from those higher sections of the industry which, in addition to supplying the dealer with goods, should supply him with ideas and inspirations. The manufacturer and the jobber should do more than merely believe winter business a good thing. There should be active participation in the work and each individual company should have a specific plan, and should see that it is followed out diligently during the rest of the winter.*

Here Are Suggestions

1—Sell your entire organization on the winter business idea. Make sure you are thoroughly sold on this idea yourself and make sure the entire organization gets it too.

2—Have meetings of the road men, talk to them individually, and impress upon everyone of them that it is important that there be more winter business than there has been.

3—Get the road men to talk winter business to the dealers.

4—Get the road men to work out plans for dealers and help them get started. There are some very good ideas for road men in this Winter Business Number of Motor World. Every salesman should have a copy.

5—Prepare advertising literature of a size that will fit the dealer's envelope, ask each dealer how much he can use, advise him how to use it, and endeavor to give him what he wants. Don't ship him a bundle of stuff that is useless.

6—Plan window displays for dealers and furnish some of the decorative material. Don't try to hog all the dealer's window space. Try making him some windows in which your goods occupy the focal point but in which there is room for some of the other things he sells.

7—Send letters and bulletins to dealers all winter telling them what to do and what others have done.

8—Get your road men to send you information on what dealers are doing.

9—Get your dealers to read Motor World.

10—In all your advertising have winter business copy Don't run merely the usual form of advertising in which you say you have nice goods. Let your advertising tell the part these goods can play in the winter life of the prospect and dealer.

How to Use Advertising Matter

MILLIONS of dollars are spent preparing advertising matter to boost the sale of goods. The manufacturer turns out bales of it every year with the hope that it will help the dealer sell more of the manufacturer's product. Much of it is not used because it is great big billboardy stuff that can't be put into an envelope without extra postage, and some of it is so screaming and blatant that no self-respecting man would hand it out.

BUT there is a large quantity of GOOD advertising matter that will help YOU sell goods. It is simply one of those little steps in merchandising that help YOU be 100 per cent efficient.

How to Do It

1—Find out how many letters you send out weekly or monthly to your customers.

2—Write to manufacturers of the goods you sell asking them for SAMPLES of the advertising matter they can supply. Specify that some must be of a size to fit your business envelopes. State the size of your envelope.

3—Order half as many inserts as your monthly mail amounts to.

4—Order a reasonably large quantity of such other literature as you can handle. Don't get too much.

5—See that the mail clerk slips an insert of some kind into every piece of mail that goes out.

6—Build a rack on the wall of your store, office or garage entrance, like the time table racks seen in hotels and railway stations.

7—Keep this filled with literature.

8—Put a sign over the rack such as: *"Time Tables. Routes to Winter Comfort. Take a Ride."*

9—Watch what literature goes fastest. Study whether it is because of the goods or the shape or size of literature. If the latter you have learned something. If because of the goods PUSH THOSE GOODS.

10—Put little piles of literature here and there on the counters and showcases. Keep these piles straightened up.

11—Put some literature of some kind in every parcel that leaves your store.

12—If you find you have more literature than you can dispose of have a boy drop it into the cars that are parked downtown.

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13—Make your display of goods and your literature hook up. Thus: If you are shooting out bales of literature on heaters have heaters on display at the same time. Also, make your sales effort in the store all bear toward that same end. In this as in everything else concentration of effort is invaluable.

How to
Make Bobs and Sleds

DON'T you remember the envy with which the rest of the crowd looked upon the fellow who had a nice pair of bobs when you were a boy? And can't you right now think of several sons of well-to-do parents of your town who would pay almost any reasonable price for a distinctive coasting outfit? And can't you also foresee that there will be as there have been times when some of the men in your shop will have spare time? This spare time can be put in building sleds and bobs which can be sold at good prices.

The Plan

1—Make a pattern. Perhaps you can work without a pattern.

2—See which shop man has the most spare time and put him in charge of building this pair of bobs. If any of the other men have spare time, they can be assigned to assist this man.

3—Put on foot rests and electric horn, spotlight and other accessories that will give the outfit real class.

4—*Ask some big department store if it will not permit you to put the bobs in the window.*

5—Perhaps you can induce these departments to display the bobs, give them space in its advertising by commission basis. Perhaps the store can take orders for other work of this kind.

6—It is possible to put a motor cycle motor on bobs of this kind, but that can be done at appropriate additional cost if the buyer wants it.

How to
Get Repainting Work

THESE are times when a lot of car owners are hanging onto their old cars for another year. They are hesitant because of war conditions. Well, let them be. If you can't sell them a new car you can at least sell them the idea of repainting and fixing up the old car.

There is always something you can sell the car owner. Just picture to him what a snappy looking outfit he will have if he lets you repaint the car and put on some slip covers. He'll never know the old boat.

And when you get the car in for this work don't let it go out without having called to the owner's attention some of those nice accessories you have.

How to Do It

1—Make a paint room. This must be in a quiet part of the building where there is no jar from machinery. It must be dustless and have a door with a lock so the painter can keep everyone out. A paint room is no place for loungers, visitors or smokers. Good light is essential.

2—Engage a painter if you haven't a man who can paint. Perhaps you have a man who can do the work with the directions a manufacturer can give you.

3—If it seems impossible for you to fit up a paintshop and hire a painter the next best thing is to contract with an outside painter to do the work. You can probably make suitable price arrangements so that you still make a profit on the work.

4—If you consider it wise work out a time payment plan: So much when the car is put in, so much a little later and the rest when the car is delivered.

5—Get a list of all the cars in town of 1916 and older.

6—Put the 1915 and 1916 cars in a No. 1 list and the rest in a No. 2 list. The reason for this is that when a car gets very old the owner doesn't care how it looks, whereas 1915 and 1916 cars can be made to look almost new by a little overhauling and their owners are quite proud of appearance.

7—Send Repainting Letter No. 1 to the entire list. (*See page* 45.)

8—Call on the man in No. 1 list whom you consider the best prospect. Continue your personal canvass of this No. 1 list.

9—One week after Letter No. 1 send No. 2. (*See page* 45.)

10—One week later send No. 3. (*See page* 45.)

11—Continue canvassing.

12—If you have a car salesman who doesn't seem busy assign him to this canvassing work. Not only will it help get business NOW but it will put the salesman in touch with some good prospects.

13—The paint maker or jobber should be able to supply you with inserts for your outgoing mail. It would be fine if you could secure some small color cards and a card with a car-shaped hole in it so the prospect could try out different colors in his own office.

14—In case you find a man who is thinking of buying a new car of some other dealer tell him this:

> "If you do buy a new car you can get much more for the old car if it is repainted and fitted with slip covers. You can more than get your money back. In fact, it is considered good business by the best dealers to repaint cars, because they sell for so much more."

Then after you have fixed his car over he probably won't buy a new car. But don't try to talk any man this winter out of buying a car.

15—*When about to deliver the car show the owner what a fine thing a spotlight is, or a rain-wiper, or a new horn, or some other accessory or accessories. Pass up no opportunity to sell your goods.*

How to
Do Radiator Work

DURING the winter there are many little repairs that a car owner should have done. Most of them would have this work done if you could only call it to their attention and make it easier for them to patronize you.

Do This Repairing

1—Get suitable radiator repairing equipment.

2—Get a good radiator man or train one of your own men.

3—Write to all dealers telling them you are ready to do radiator work.

4—Follow this letter up by a telephone call.

5—Make a list of car owners.

6—Send radiator letter No. 1. (*See page* 44.)

7—Send radiator letter No. 2. (*See page* 44.)

8—Send radiator letter No. 3. (*See page* 44.)

9—In case you can locate what you consider worth while prospects, it is worth while to go out or send a man to make personal solicitation for this work.

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How to

Lay Out a Newspaper Campaign

ARE the ins and outs of advertising a mysterious thing to you? Do you ever wonder how much you spent last year, how much you ought to spend this year, how much you ought to spend this winter?

Sometimes it is puzzling, but it isn't difficult once you understand how it is done.

Advertising hit-or-miss is unwise. It causes your money to work inefficiently. Do it the right way and you'll get greater results for your money. Furthermore, ADVERTISE. Don't regard advertising as something to be done when you can't think of anything else to do. Decide NOW to advertise this winter and

Lay Out Your Campaign This Way

1—Determine how much you can spend. Use from 20 per cent to 5 per cent of your gross sales for the period during which the campaign is to run. Thus:

If you estimate that you can sell 20 sedans in four months, totaling $25,000, you can use from $500 to $1,250. The range of per cent varies according to the push you are going to put into the campaign and the need for getting business. Normally 2 per cent is about right for a year's percentage.

2—Determine how long campaign is to run. For sedans you should start NOW and run until about Feb. 15.

3—Divide your appropriation into weekly amounts.

4—Select the papers you wish to use.

5—Find which days the newspapers get the most editorial attention. Find when the automobile sections are run. Sunday may or may not be a big day.

6—Get rates from the newspapers on contract terms and determine how much space you can buy each week.

7—Divide this space for greatest effect. Thus:

A 5-in. ad Tuesday, a 5-in. Thursday and a 10-in. Sunday are better than one 20-in. ad Sunday. If you use more than one paper stagger the ads, that is: Monday in one paper, Tuesday in the other, Wednesday in the first, etc.

8—Lay out on a sheet of paper the dates, papers and spaces you are to run. Get this space schedule definitely scheduled before you start.

9—Decide on an idea for the series. If you are a garageman it is: "MOTOR IN WINTER," or "MOTOR IN COMFORT." If you are pushing sedans it may be: "BE COMFORTABLE THE YEAR AROUND. DRIVE A SEDAN."

10—Prepare copy for all or part of this series.

11—Try to standardize appearance, using the same type, set-up, border, etc.

12—*Put a "hook" in your copy*, something to make the reader come in, 'phone or write, such as a booklet, arrival of a new car or accessory, etc.

13—Get the assurance of co-operation editorially by the newspapers. Their motor departments are conducted for this purpose.

14—In connection with this advertising make your circularizing campaign fit in. Have a certain ad followed by a certain letter so that the man who reads the ad will connect the letter with it.

15—Keep up the campaign to the finish. *An ad to-day and another next month is money partially wasted.*

Here Is Copy to Be Used in Winter Advertising. Set It Up in the Styles Shown in This Story.

BRING YOUR CAR HERE!

What's the use of making your car more expensive to you than it ought to be?

Let us show you how to get the most pleasure out of it at the least cost.

Bring it in to-day. We can explain things to you in ten minutes.

FAIR PLAY GARAGE.

You can plainly see from our cost system just what we do for your car and the real value given for the amount you pay.

Cold Weather Made Profitable

DON'T BLAME YOUR CAR

For what it costs you until you have brought it in here and let us tell you just what causes the expense.

It won't take ten minutes to explain our system.

Bring it in to-day. It costs you nothing to consult us; then you can decide for yourself whether or not we can save you time, trouble and money.

FAIR PLAY GARAGE.

Our cost system shows plainly just what you get for the money paid us. There is no camouflage here.

Cold Weather Made Profitable

AREN'T YOU PAYING TOO MUCH

For the upkeep of your car?

Do you know just exactly what you are paying for and why?

Bring it to us to-day and give us ten minutes to explain our cost system.

Don't help the tax makers to place motor cars in the class with cosmetics!

FAIR PLAY GARAGE.

Our cost system plainly shows you just what you pay for and the real good you get out of it.

Cold Weather Made Profitable

WHAT ARE YOU GOING TO BUY FOR CHRISTMAS?

Some problem, isn't it?

You want something practical, something that will be liked and kept and used by the one to whom you give it, and something that doesn't soar into the clouds on cost.

Our suggestion is that you give motoring gifts to those who motor, your relatives and friends. These gifts are all practical, and the one who gets them likes them very much.

Here are a few.

List of goods.

BLACK & CO.,
778 Avenue B.

Cold Weather Made Profitable

MOTOR IN COMFORT—RIDE IN A BLANK SEDAN

In a Blank sedan you are protected from all the rigors of winter. You are warm and cosy. You can drive without gloves or overshoes. You really don't need an overcoat. You are as comfortable as when sitting in the protection of your own living room at home.

In our showroom is the latest model of a Blank sedan. You are invited to

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Here Is the Way to Set Up Ads That

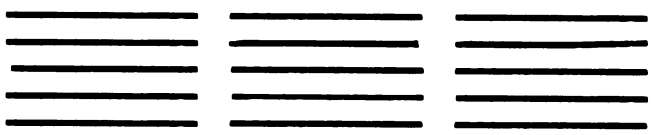
All These Set-Ups Are Aimed for Best Newspaper Results

Better Health

Keep your car on the Job all winter. It saves Doctor Bills.

Winter Accessories:

We have winter accessories that will make your winter driving a joy and a comfort.



Courtesy, Promptness and Attractive Prices

Warren Hastings & Son

AUTOMOBILE SUPPLIES

457 North 18th Street **Cohoesink**

THIS IS AN ADVERTISEMENT THAT WILL HELP YOU SELL WINTER ACCESSORIES. IN PLACE OF THE LINES PUT IN THE WINTER ACCESSORIES YOU HAVE

MOTORISTS PREPARE for Winter

Make yourself comfortable. Keep your hands, head, feet and body warm.

Don't Shiver

Come to our store and let us show you some of our winter driving comforts. See our

Warm hand steering wheel **$8.00**
Car heater **6.00**
Snow cleaner ..... **.75**

These and many more accessories are being used on countless cars these cold and snowy days. As they have made winter driving a pleasure for others, they will bring

Comfort for You

The development of this part of the automobile industry to quant'ty proportions has brought prices down to an exceedingly reasonable level. Look over our winter goods and get ready for the cold days.

Smith & Allen

Oak Street, Northvale

THIS IS A SAMPLE OF WHAT CAN BE DONE IN A SINGLE-COLUMN SPACE

Don't let Winter get your nerve!

Let us put your car in condition for Winter driving. You don't have to drive all Winter with cold hands, cold feet, cold ears and cold body. Not by any means. There is a cold weather comfort for every cold weather discomfort. We have the comforts. The addition of a few of the comforts we have will make your Winter driving a pleasure, will let you get full advantage of the crisp, healthful Winter air and will make motoring an all-year-round delight instead of a Summer joy and a Winter discomfort. Here are a few comforts:

Warm hand wheels	$0.00	Caps	$0.00
Warmed gloves	0.00	Coats	0.00
Foot warmers	0.00	Winter tops	0.00

Robert M. Harris & Company

710 West 81st Street, New York City

HERE IS ANOTHER WINTER ACCESSORIES ADVERTISEMENT. LIKE THE ONE ABOVE, IT ALSO FEATURES WINTER DRIVING. YOU MUST KEEP THE CARS RUNNING

Are You Ready for Winter?

CUT

Keep your hands warm, your feet warm, your ears warm, your motor warm, your body warm and everything ship-shape, so the car starts easily and runs well and efficiently. We can make your winter driving a real pleasure with our winter comfort accessories.

WEST END GARAGE

AND THIS IS WHAT CAN BE DONE WITH A SMALLER SINGLE-COLUMN SPACE

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Will Help You Make Money This Winter

The Copy in These Ads Can Be Used Just As It Stands

Warm Feet
THIS WINTER

Keep your Car comfortable with an

Exhaust Heater

1. **Costs nothing for heat.**
2. **Reduces back pressure on motor.**
3. **Easy to install.**
4. **Attractive prices.**

See it in our window

AUTO SUPPLY CO.
903 Asche Street

CATCHY COPY SUCH AS THIS WILL DO A LOT TO KEEP YOUR BUSINESS HUMMING

come in, open the door of this car and see what a beauty it is inside and how far the designer has gone in planning for your comfort.

EAGLE MOTOR CAR CO.,
777 Henry Avenue.

DRIVE YOUR CAR ALL WINTER

We wonder who it was that first set the fashion of laying a car up when winter comes and losing all the enjoyment that comes from winter driving?

He probably got the idea because he drove one of those old-time cars that had no front doors or anything else.

But to-day you can motor all winter in comfort. You don't have to shiver or freeze and you don't have to encounter any motor troubles.

Just drop in and see our winter comfort accessories and the little things we have—at small cost—for making winter troubles into comforts.

BLACK GARAGE,
220 Avenue A Smithville.

USE A TRACTOR—SPEND LESS MONEY

Using horses and hand power on the modern farm means spending more money producing your products than is necessary.

You should cut down costs and thereby make your profits larger.

Do you know of all the things a Blank tractor can do for you?

Winter Garage Service — In Winter your service requirements are different than in Summer. Your car must be kept warm. It must be protected against the cold and the frost, which may, through an hour's carelessness, cause you untold damage. You require the services of competent and careful mechanics, who will watch over your car and prevent injury to this piece of machinery that you call your car—for it is only a piece of machinery, and as such requires care.

The Washington Garage is admirably equipped to care for your needs. Here we have big, wide floors with plenty of room, where your car isn't crowded up against the one next to it.

Our mechanics who serve you, when necessary, are men who know their business. They don't charge you for four hours' time looking for trouble and for one hour fixing the trouble.

We believe one visit to the Washington Garage and a look at its interior and our organization will indicate to you that this is the one place where you should keep your car.

Step in and See Us

WASHINGTON GARAGE
Wistor Boulevard and Washington Avenue

AND HERE IS AN ADVERTISEMENT THAT WILL HELP YOU KEEP YOUR GARAGE FILLED EVEN THOUGH SOME OF YOUR PROSPECTS HAVE GARAGES IN THEIR OWN BACKYARDS

Are You Ready for Winter?

CUT

Keep your hands warm, your feet warm, your ears warm, your motor warm, your body warm, and everything ship-shape, so the car starts easily and runs well and efficiently. We can make your winter driving a real pleasure with our winter comfort accessories.

WEST END GARAGE

ANOTHER SAMPLE OF HOW TO HANDLE A SMALL ONE-COLUMN SPACE

Come in and see this modern marvel work and let us lay out for you a program of the things it can do on your farm.

BLACK & BLACK,
110 Linden Avenue, Callawassa.

Gas Engine Letter

Your great-grandad used to cradle his grain.

He used to ride in a horse car—or walk.

He used to depend on stage coach mail service.

He used to hew lumber.

He used to do a lot of things that are better done to-day, and what would he say if he could see a Blank gasoline engine doing most of the hard jobs that exist on a farm or about a home?

A Blank engine can be rigged up with shafting to do a great many things that save time, and time is valuable to YOU. If you will permit it, we shall visit you and help you list the things a Blank engine can do for you.

And then if you believe it can serve you well we shall be pleased to aid in its installation.

Return the enclosed card and let us give you an estimate. The low cost will surprise you.

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How to
Avoid Pitfalls of the Law

By George F. Kaiser

HOW to avoid the pitfalls of the law is a problem that confronts every dealer, just as it confronts every other person, no matter what kind or character of business he carries on. IT CAN BE DONE, *but it takes time and attention.*

The dealer who stumbles along and does things without knowing how or why he does them will sooner or later find himself in a trap, and will have to pay dearly for the knowledge and experience that he lacked by having to pay a judgment, court costs and attorney's fees.

Study the following examples carefully, and you will at least be able to guard against some of these pitfalls.

I. YOUR BUSINESS

Doing Business in Different Ways Imposes Different Liabilities Upon You

1. If you are doing business as an individual, ascertain if you have filed a certificate of doing business under a trade name if it is required in your state.
2. If you are doing business as a partner, read over the partnership agreement carefully and see if your partner is doing everything that he is bound to do. Remember that many a partnership has been put out of business because one partner has been extravagant or dishonest and his creditors have levied upon his interest in the partnership business.
3. If you are doing business as a corporation, find out what taxes you have to pay. Read over your Certificate of Incorporation or your charter carefully and then examine your by-laws, and see if you are holding your meetings regularly, and if you are filing the proper reports required by law.

II. YOUR LEASE

1. Take your lease from wherever you keep it and study it over carefully until you know the meaning of every word. If after studying it there are some clauses you do not understand, take it to someone who does know and let him explain the meaning to you.

III. YOUR REPAIR WORK

1. Keep account of items of time and materials put in on each job so that in case you have to sue a man you will be able to show that you are entitled to the amount you claim. *File orders for work away carefully.*
2. Find out if you have a garageman's lien law in your state and just what you can do if a man refuses to pay the repair bill, and find out how you foreclose a lien, and if you have the right to hold a car until you are paid.

IV. YOUR STORED CARS

1. See that you are taking all the proper precautions for the safety of cars that are stored with you that other dealers in your neighborhood take.
2. Provide a checking place for robes and other personal property left in a car. Post a sign saying you will not be responsible for personal property unless checked at the office.

V. YOUR INSURANCE

1. Do not buy insurance and put the policies away without reading them. Examine them carefully and if something happens do exactly what the policies say you must do, or you will find out that you have lost your right to demand payment from the company because of your neglect.
2. Make all checks for insurance payable to the company itself, and not to agents or brokers, or some day you may find the broker has disappeared and that you must pay the company all over again.

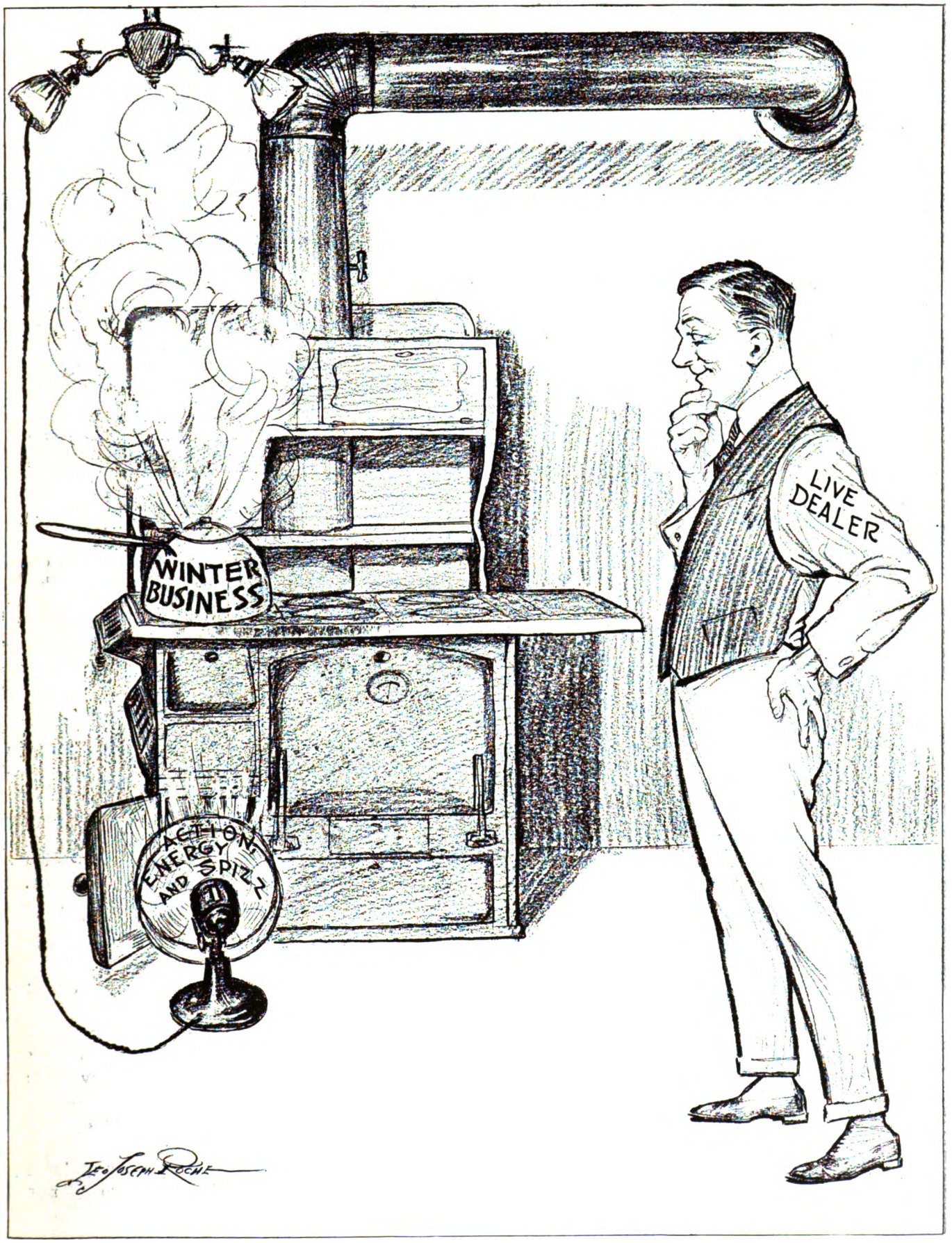
VI. YOUR FINANCES

1. If anyone asks you to sign or endorse notes or guarantee their credit don't do it unless you are ready, able and willing to pay the amount for which you are obligating yourself, without injury to your business.
2. If you do sign notes or guarantee credit remember that a demand may be made upon you for payment and that if you do not pay you will have a law suit.
3. If a stranger offers you a check, do not accept it unless it is certified. This is a good rule to follow in all cases where checks are offered, whether the party be a stranger or not, as a person offering you a check may have no account in the bank upon which the check is drawn or an account of only a few dollars.
4. If you write your name on blank checks or blank sheets of paper, remember that someone may fill them out in a way that you never expected them

(*Continued on page* 34)

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B'gosh! It Works!



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How to Trim Show Windows

THERE are several fundamentals in window trimming that should enable every dealer and garageman to trim windows that are pretty fair if not excellent. And every dealer and garageman should have window displays. They are money-getters. The man who goes through the winter without using his windows is like the man who forgot his rubbers. *They would keep his feet dry if used.*

Get These Points

1—If you haven't a window ask Motor World how to build one. Give us a rough sketch of your front with dimensions and how much you are willing to spend. For a small charge we can furnish plans, which will be prepared by a special Window Service Department.

2—If you have a window, clean it and keep it clean.

3—Have a suitable background, not an open space. Make this of wood, cloth or anything you can get. But have something.

4—With boards—2 x 4's, etc.—make some fixtures from a few inches to 3 ft. high.

5—Get from your stationer some ink, cardboard and a small lettering brush. Get ready to letter. *Practice.* Use cards in your displays.

6—Have the window brightly lighted with concealed lights above; also below, if possible. Be sure the lights are concealed and BRIGHT.

7—Use few goods rather than a lot. Don't forget this point.

8—Select the goods that are to be the principal goods in your window. Place these at the center.

9—Follow the sketches shown in connection with these directions. Put big goods, such as robes, coats, piles of cartons, piles of oil cans and other large objects in the spots where the objects are shown in the sketches. Things don't have to be on pedestals because pedestals are shown in the sketches. These pedestals and little pyramids merely represent where MASS is to be placed. The vacant spaces can be filled in with a FEW smaller objects.

10—Don't crowd the window.

11—Change the window often. Don't let one display stand more than a week.

12—Experiment and find which man in your organization is the best window man. Or maybe it's a girl. Make that person the window trimmer.

Window Fundamentals

The fundamentals of window dressing are not difficult to grasp. They can be carried easily in your mind.

On the opposite page are shown the five fundamental methods of placing mass in any window display. The objects that look like miniature Christmas trees represent the large masses, or large articles which are put in a window.

These large masses do not necessarily make a display. These diagrams merely show where to put the big things, for it is the big things that count in making a display.

After you have the big masses placed as shown, it is time to think of putting in the little ones to help fill up.

How to Avoid Pitfalls of the Law

(*Continued from page 32*)

to be filled out, and you may wake up some day to find out that your entire bank account has been withdrawn by *someone whom you always believed to be honest.*

5. If a check is marked "In full payment" when it really is for only part of an account, don't deposit it—return it, or you may forfeit your right to sue for the remainder of the amount due you.

VII. YOUR EMPLOYEES

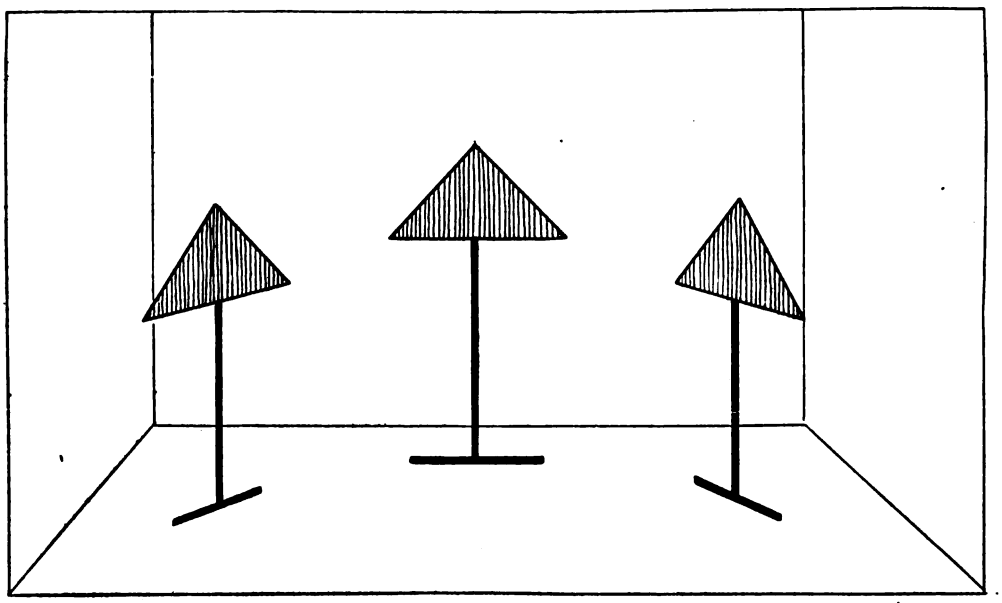
1. Under no circumstances furnish drivers for your customers as part of your duties in storing a car. Your business, your home, and everything you have may be taken upon judgment recovered by someone who is run down and severely injured through the negligence of the driver. It is not worth the risk for the few dollars additional that you would receive.
2. If there is a state law requiring that you insure all your employees, do it at once, for, if someone is injured and you have no such insurance, you may not only have to pay for his injuries, but may also find yourself considered a lawbreaker and liable to punishment as such.
3. Before allowing mechanics or employees to drive, find out if a chauffeur's license is required in your state, *and if they have one.*
4. If you have any valuable employees you had better make a contract with them, so that next week they will not be working down the street for your competitor.

VIII. YOUR CONTRACTS

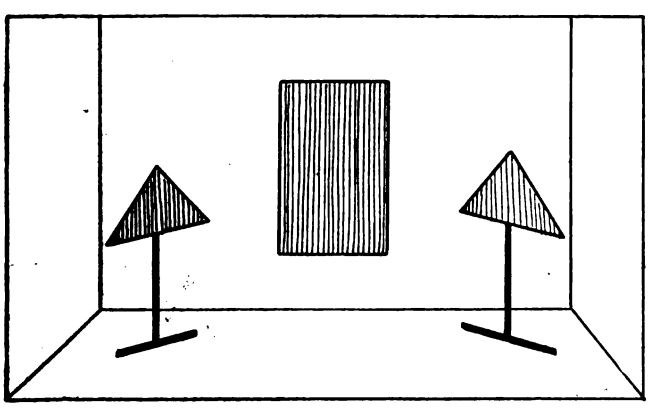
1. Be careful never to sign any papers which may be disguised contracts or orders.
2. Never sign a paper presented to you for your signature by people coming to you with something to sell unless you read and understand every word of it, or you may find yourself bound to buy something which you never intended to buy and which you really cannot afford.
3. If you do sign contracts, do not put any faith in verbal promises, but see that they are all put in as part of the contract.

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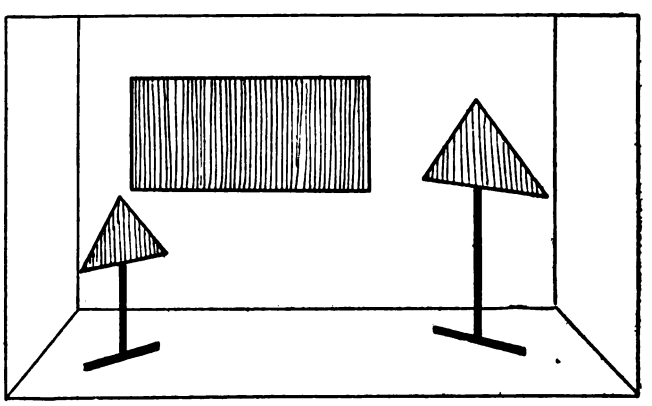
5 Fundamental Arrangements of Mass in Window Display



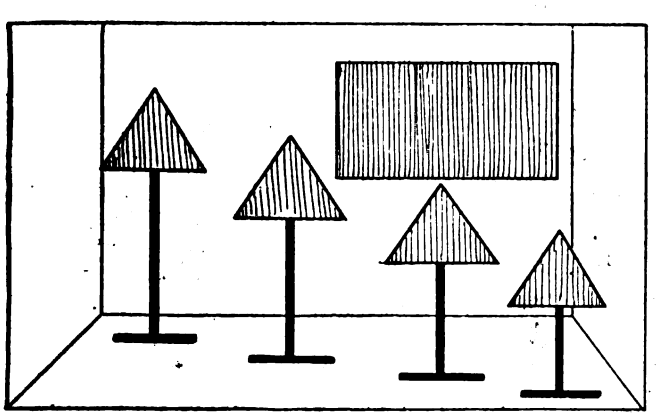
This is the ordinary, symmetrical arrangement of mass in the window. Large articles are arranged as shown and small items are used to fill in and complete the display



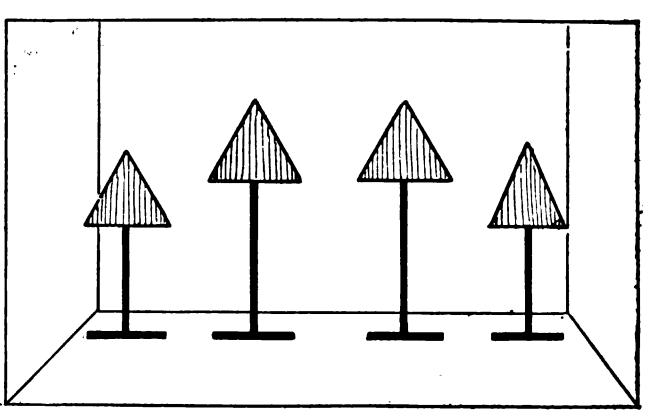
This is another symmetrical arrangement with two masses at the sides and a card in the center instead of a large article



This arrangement is what is known as "occult balance"; that is, it is out of balance yet appears balanced. It is difficult to arrange well

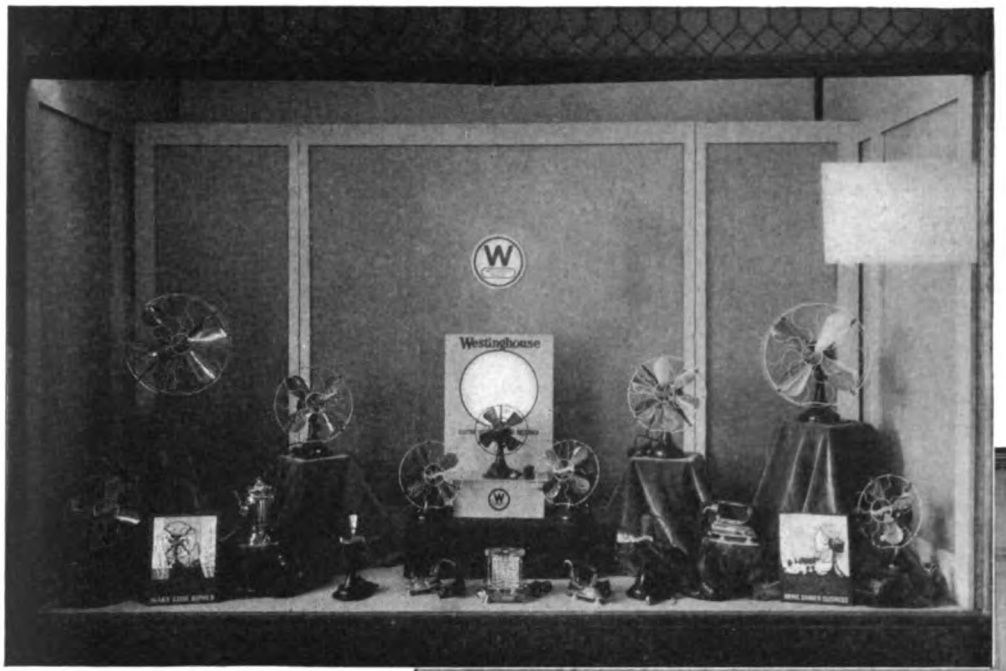


This is another example of occult balance; such an arrangement would be used in a somewhat longer window, however



Displays with the masses arranged like this generally are used only for very long windows; this is known as "monotony"

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Trim Your Windows



Do This

USE the model windows shown on this page in setting up some displays of accessories in your own windows. These windows are set up by a window service connected with Motor World and it is our plan to offer to our readers a window service that will be of wonderful value to you. But first do this:

Select from your stock goods of about the same bulk as those shown in these pictures. In the upper picture, for instance, you could set such a common article as a big can of oil on a draped pedestal for the two outside pictures. Smaller cans could occupy the next two and still smaller cans the next two.

In the foreground use any small accessories you have.

In the center window put a pile of tube cartons at the right. This is an example of the occult balance shown in the sketches on the preceding pages. In the foreground use small accessories.

At the left stand a tire, or put up a display card.

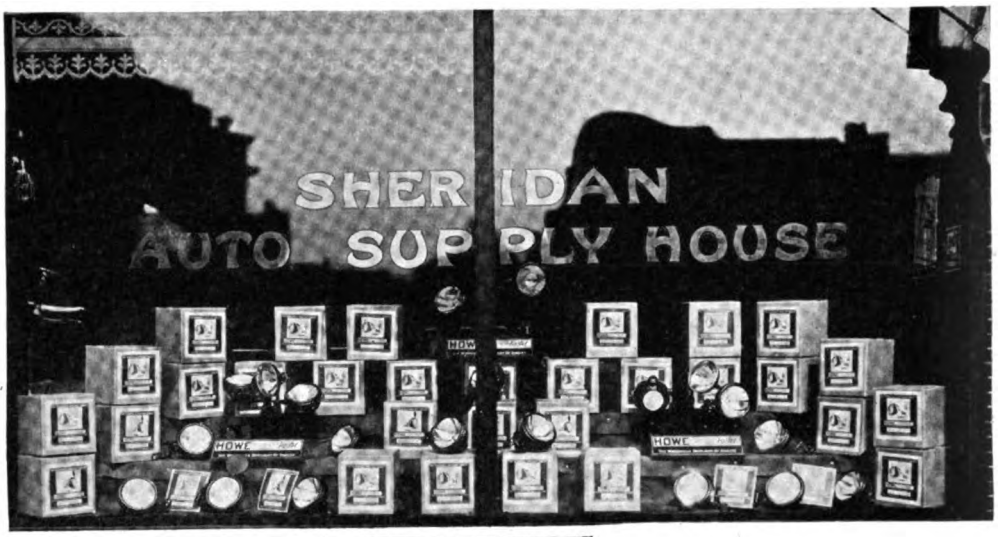
In the bottom picture use any goods that approximate the same size as those shown. One thing remember: DON'T CROWD.



The center window is an example of occult balance, as described in the sketches on preceding pages. The lower window and the one at the top of the page illustrate symmetrical balance. There is just as much on one side of the center as on the other. Read the directions at the left of this page and set up some windows

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Do It This Way





The window at the top of the page is made of Howe spotlights. It is furnished to Motor World by the Charles H. Touzalin Agency, Chicago, which handles the Howe advertising. This is a window that any dealer can duplicate. All you need is the spotlights.

The window at the left was set up by the Fashion Camera Studios with which Motor World has made arrangements for the opening of a special department on window work. ***This window, you will note, is made of nothing but oil cans and drums, a few cards and a chart. It is Mobiloil. See if you can't duplicate this.***

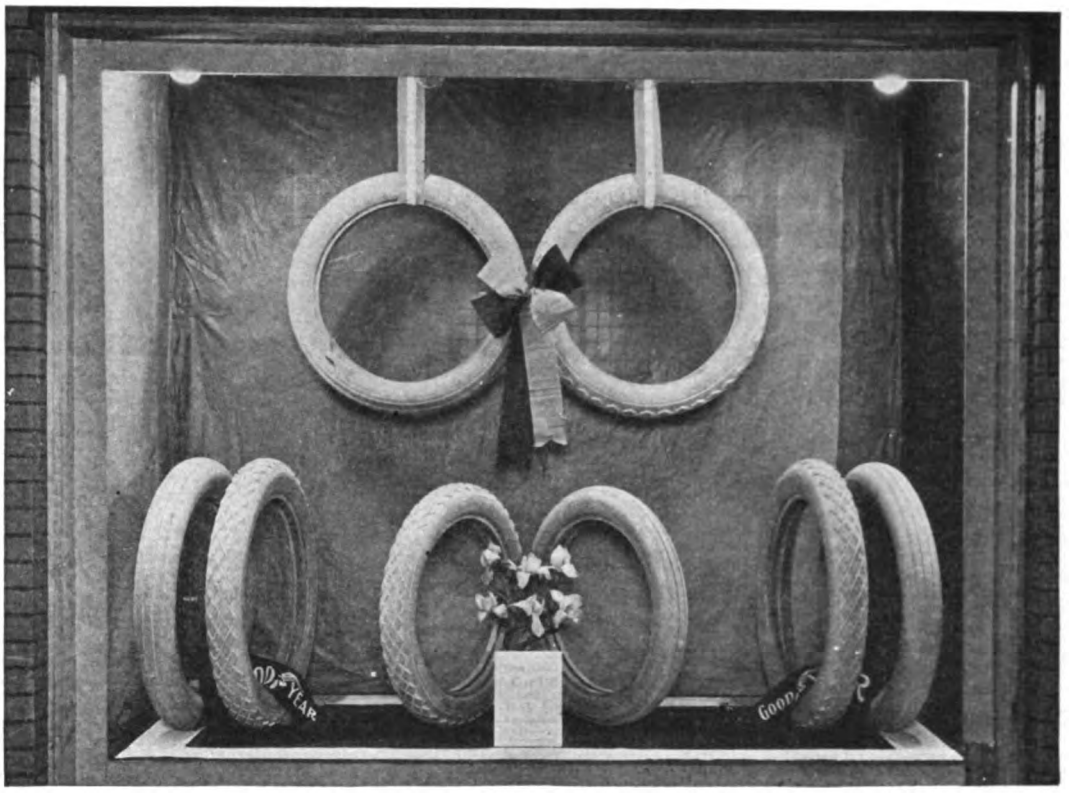


The window at the bottom of the page can be made into a Christmas window in short order. All you need is a couple of evergreens of about the shape shown, a couple of boxes or pedestals covered with robes or draperies, four large-sized accessories to take the place of the heaters, some smaller accessories for the foreground and a Christmas sign in the center. With this much as a guide you should be able to set up a ripping holiday window.

These windows are among the easiest you can find to set up. There is nothing difficult about them. Get some boards and a handful of nails to make pedestals where necessary, some robes and things for drapings, some accessories of the size shown and that's about all—except a little work

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Be Your Own Window Trimmer



This is easy. You don't need any directions for setting this up. After you get the tires in place put a couple of cards here and there and a few sprigs of evergreen, or cornstalks and a couple of pumpkins or so and the job is done



For the side pedestals make some stands out of boards and drape them with robes or dark cloth. For the center rest get a soap box. On the side stands set some lunch kits. Where the small fans are lower down place some spotlights. On the corners of the soap box support a couple of fire extinguishers. Around in the foreground place any other small accessories—but NOT too many

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Set Up These Windows



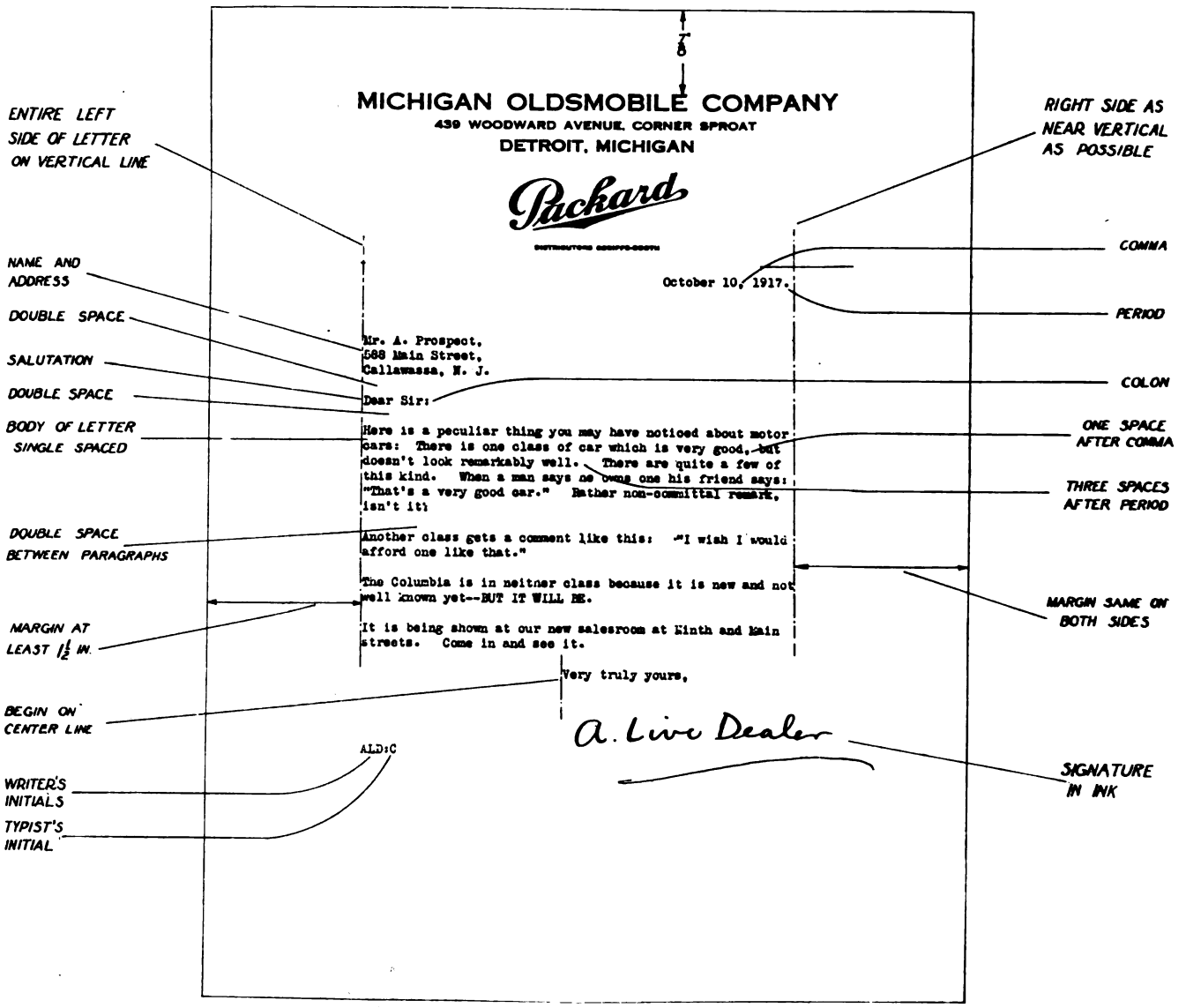
For the screen at the back borrow a screen from your house or rent or borrow one from a department store. Build the stands in the back corners or use boxes and drape them with robes or colored cloth. In place of the hot water bottles you may use fire extinguishers, water buckets or cans of oil. Small accessories can be laid on the floor in front.



Stack up some evergreens or cornstalks in the form shown. On the center block erect two tapering piles of oil cans, big cans at the bottom and small ones at the top. A tire can be stood across each corner if you have no other goods to put there. On pedestals place spotlights where the light-colored stoves are shown. Make a card for the center.

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How to Make a Letter Look Well



You Should Do This

THERE are certain things you must do if you would have your letters not be a waste of money. Motor World sees many letters from dealers that clearly indicate carelessness. Perhaps the girl is to blame. If she is, just call her attention to this page and ask her to see what a neat letter writer she can become.

Remember this: There are various ways of writing letters, any of which may be perfectly correct, but it is advisable to find some ONE good way and stick to it. That is what Motor World has had to do in its own business, and so we present to you what we consider the BEST way and suggest that you follow the directions shown on the sheet above.

The letter should have even margins.

The letter should occupy the center of the page; that is, it should not be too wide if it is short. If you are writing a letter of only a few words pull in the length of your lines and make the letter a rather neat little square block.

The directions for writing the letter are plainly indicated on the above sheet. Follow this style and you will have nice letters. Get into the habit of doing it this way and you will always have good results.

The letter that leaves your office represents you just the same as does a salesman. If the letter is a bum piece of work it is the same as sending out a bum salesman. Why have a BUM when your letter can just as well be a *gentleman?*

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How to
Write Form Letters

FORM letters are business getters. They take the place of salesmen. You can afford only so many salesmen, but you can reach out with a thousand arms by the use of form letters. But the form letter, to be effective, must (a) be good looking and (b) tell something.

Good form letters flooded numerous dealers and garagemen with business last winter. Many of them found their letters in MOTOR WORLD'S 1916 *Winter Business Number.*

Form letters provide one of the easiest means for pulling Winter Profits into your shop. Start using them NOW. Do the job RIGHT. Other trades and businesses have built fortunes through form letters and you can make a lot of money if you will use them.

Do It This Way

1—Get some good stationery. You don't need to be extravagant. Simply avoid cheap, shoddy stuff. *Consult a good printer.*

2—Get an attractive letterhead. Avoid billboardy effects. Motor World will design a head for you upon request and will help you write letters.

3—Elsewhere is shown a good letter with dimensions and punctuation. Follow this style.

4—The letters should be nearly squared up in the center of the sheet.

5—Insist upon neat work. Otherwise you are wasting your money.

6—Insist upon neat addressing of envelopes. Otherwise you are wasting your money.

7—Insist upon neat folding and *clean handling*. Otherwise you are wasting money.

8—In the first paragraph of the letter talk in terms familiar to the prospect. If you talk about flowers that grow in Labrador it is Greek to him. But if you talk of cold feet and hands from driving you have *slipped right in among his thoughts.*

9—In your next paragraph hitch his thoughts onto your proposition by saying something about what your goods can do for him. Never talk merely of your goods. He isn't interested in them. What interests him is what the goods can do for him.

10—At the close of the letter urge him to do something; come in and look, reply by return card, telephone, order by mail or something. Don't close aimlessly.

11—Have the signature in a good hand in pen and ink. *Cut out rubber stamps.*

12—Use short, easily understood words.

13—After drafting your first letter go through it and cut out all the big words.

14—Ask someone to read the letter and criticize it. If the person who reads it stumbles over some point and doesn't easily get it change the letter in that point. Ask one of the shop men to read it. See if he gets it. If he doesn't there is something wrong with the letter.

15—As to printing the letters, you can find in your town mimeographing companies that do this work well, and even fill in and address if you give them your prospect list. If you are in a very small town ask your jobber or distributer to put you in touch with a letter printing company.

16—In case you have not a long prospect list it is better to have all the letters done by a stenographer.

17—Three or more letters should be mailed, about a week apart, on any subject you wish to get across with the prospect. One letter generally doesn't bring greatest results. A good plan is to keep continually after your list with letters and literature.

18—A most important point: DON'T MAKE YOUR LETTERS TOO LONG.

Use These Form Letters

ON the pages that follow are letters that you can use in your business this winter to help get Winter Profits. Most of these letters are a part of some one of the business-getting plans that appear on other pages. All you have to do to use these letters is this: Type them on your own stationery in the form shown on the opposite page, sticking closely to the directions on the form of the letter. In case you want letters printed and have not facilities for doing the work and can't get it done in your own town write to MOTOR WORLD and we shall be glad to assist you in carrying out this work. Incidentally, scan the advertisements in the Clearing House pages at the back of the book, where there are numerous advertisements of companies that handle letter work.

Tractor Letter No. 1

Don't you wish each of your horses could do as much as two horses?

And when you are in your busy season don't you wish the days had more hours in them so you could get more done in a day?

It is possible to bring about these greater results in your work and in the end your profits will be greater than they are now. These results can be obtained by the use of a Farm Tractor.

Let us tell you what it is and what it does:

It is a small 4-wheeled machine that will draw three plows, draw a binder, draw hay or grain, draw many other pieces of farm machinery, run belt machinery such as ensilage cutters, saws, etc., and work day and night at a small cost.

It never tires, as horses do, and when it doesn't work you don't have to feed it.

It does so many things that you can't very well understand all it does until you see it. We have one at our garage and wish you would drop in and see it.

Tell us on the inclosed card when you will come.

Tractor Letter No. 2

The cost of everything is going up. But the prices you get for the things you sell don't seem to keep pace, do they?

And what does that mean?

It means that you must do one of three things—

1—Get things for a cheaper price.

2—Get more for your products.

3—Produce your product at a less cost.

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The third step seems to be the only one possible, because you can't shove your own prices up and you can't beat the other man's prices down.

In lowering the cost of your own product a big step is labor saving machinery, and in this class the first big essential is a Farm Tractor. This machine can plow more a day than you can plow with horses and at less cost. It can work the year around and make it possible for you and your men to do much more work without working any harder, or as hard.

You should look into this matter. We have a tractor now demonstrating at our garage and invite you to come in and give it a careful examination.

Tractor Letter No. 3

Before this war is over it is going to make a difference with your business and mine. We are all going to do things we haven't done before.

My business may change in many ways, but the only change that seems to be possible in yours is a bigger demand for your produce. The farmer of America must feed the world.

In order that you may take advantage of these coming big demands it is necessary that you take advantage of every short-cut and labor-saver. If you can plow ten acres for $8 you should not spend $15 to get the same job done, because you are wasting your own money.

And if you can use your ensilage engine for plowing and harvesting it is unwise to have a separate engine for each kind of work.

The Farm Tractor can take the place of many horses, machines and men on a farm. You should investigate and learn what it can do for YOU.

Drop in at our garage any day and see one work.

Trailer Letter No. 1

Did you ever stop to consider that it isn't necessary to have an expensive motor truck or motor delivery wagon in order to carry things around town?

Did it ever occur to you that a regular motor car, that is used for touring Sundays, can do this work just as well as a delivery wagon and without harming the automobile—on one condition.

That condition is that you provide the car with a Blank Trailer.

The Blank Trailer is quickly and easily hitched on behind any car. It will carry a load up to a half ton. It saves the car from ruin through being used as a truck and gives the car owner both a car and a truck for a fraction of the cost of both.

Inclosed is a booklet telling about the Blank Trailer. You will find it worth your while investigating.

Telephone some morning and let us show you how easy a Blank Trailer can carry a load for you. We'll carry a load for you free and you won't be under any obligation either.

Trailer Letter No. 2

You haven't yet asked our Blank Trailer to come around and show you how easily it can handle one of your loads. And the little Blank Trailer is anxiously waiting to show you what it can do.

If it can produce the goods it is sure you will think well of it and perhaps consider using one in your business. And if the trailer can't "show you" it will be quite contented to come back home and forget about the matter.

That's fair, isn't it?

Suppose we put it this way: You drop in at our showroom at 131 Elm Street and look at this trailer. There are three points we wish you to examine. They are:

1—Its light and inexpensive construction.

2—The ease with which it hitches and unhitches on any car.

3—The great variety of forms of body that can be attached.

Pay us a call and become acquainted with this latest efficiency device that is saving money for many business men at this time when economy and efficiency are made necessary by the unusual conditions.

Use These Letters In Your Business

Trailer Letter No. 3

It would be mighty handy, wouldn't it, if you could walk up to an automobile Monday morning and say: "Presto chango!" and have the car turn into a truck?

And wouldn't it be mighty handy if later in the day you could wave your hands over the truck and have it change back into a touring car?

But it's foolish, isn't it, to talk about any such thing as that?

The nearest you can come to it—and you can come quite close—is the Blank Trailer with its "Presto chango!" attachment to a motor car.

The car does truck work one minute and the next minute is a touring car again. It gives you a double vehicle at a low cost. It does Sunday work, weekday work and is efficient both ways.

You really ought to know about it. Maybe it can add to the pleasure of life for you and save money in your business.

Please tell us by telephone right now when you are in and we'll be glad to drive this trailer to your door so you may see just what it's like.

Fire Extinguisher Letter No. 1

Light a newspaper with a match.

Watch it burn.

Hold your watch.

Count the seconds.

It didn't burn much in the first ten seconds, did it?

And when it got started it went farther in ONE second than it went in the first ten.

How easily you could have put the fire out at any time in the FIRST ten seconds.

The same applies to any fire—in a motor car, your kitchen, your dining room, or anywhere. The FIRST TEN SECONDS IS WHAT COUNTS.

And in half of ten seconds you could reach for a Blank fire extinguisher and save more life and property than the whole fire department could save fifteen minutes later.

Have you a fire extinguisher? Don't you think one would be a good investment?

Drop in at our store and let us show you how even a child can use it.

Fire Extinguisher Letter No. 2

The other day there was a fire in a garage up on Beach Street. A cold motor backfired. Cold motors are likely to do that these days, and there is always the possibility of a fire.

But any fire is harmless if it is reached IN TIME.

And the only way to reach a fire in time is by having a fire department on the job when the fire starts.

And the only way that can be done is by having a Blank Fire Extinguisher in your car. Then a few movements of the handle and it's all out.

Your car cost—how much?

And a Blank Fire Extinguisher costs only $10.

Having a fire extinguisher is something like planting $10 and raising $1,000, isn't it? It might be some day. You never can tell.

Anyone can operate a Blank. Drop in at our store and see how easily they work, how easily they are mounted and how quickly they can be taken down and put into operation.

Fire Extinguisher Letter No. 3

Your children have fire drills at school.

Men have fire drills in factories.

But what about your own home and property?

If a fire started in the kitchen what would happen? If a fire started in your car what would be the result?

We suggest this: Get a Blank Fire Extinguisher and go through several practice drills—yourself and members of your family—just the same as they have in schools and factories.

Then some day—if that regrettable time ever should come—and it may—you would have some chance of putting out the fire in that all important FIRST TEN SECONDS.

Drop in at our store and see what a big measure of protection of property and life you can get for $10.

Garage Heater Letter No. 1

Does your garage get cold and frosty these days?

And does that make your motor start hard?

And do you have to drain the radiator and watch it carefully to see that it doesn't freeze.

And when you want to work in the garage—as we all do—do your fingers get cold and the tools feel like ice?

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You can make your garage comfortable and warm, so you can work with your coat off. You can protect your car from all the troubles of cold. And you can make your winter motoring as pleasurable as that of summer if you present your garage with a Blank Garage Heater.

Enclosed is a booklet that tells about it, but it can't begin to tell what you yourself could see if you examined this personally. On the enclosed card give the dimensions of your garage and we'll be glad to send you information as to what a heater installation would consist of for your garage.

Garage Heater Letter No. 2

How much rent would you pay for a house in which there was no heat?

Folks used to live in unheated, uncomfortable rooms, and in English hotels to-day heat comes "extra."

But to-day we are accustomed to warm rooms, and the American kicks like a steer at the English hotel. It's all a matter of habit of living.

Before garage heaters were perfected the unheated garage was a habit of living. But to-day the man who has found that he can keep his car warm, make his motor start readily, work in comfort with his coat off and really ENJOY his garage in winter thinks of an unheated garage as he does of an English hotel. He cusses every time the cold upsets his disposition.

As one man says: "After I stay in the house about so long I just have to get out to the garage and monkey around, and I couldn't get along without a heater."

Ask us to examine your garage and tell you the size of heater you need, how it should be set up and what it would cost. This examination costs you nothing. Your telephone message will receive as much attention as a written letter.

Garage Heater Letter No. 3

What is a garage for? We mean one of those private garages that are on your premises and that house your car.

Almost anyone would say: "To shelter your car."

But you and I know that that answer is about 75 per cent wrong. True, the garage does shelter the car, but we know that the garage is also much used as a recreation building for the car owner. He works, putters and enjoys himself. He works on the car, fixes chairs, cuts boards and drives nails and just has a grand time in this little garage that people think was built to shelter the car.

And, at that, the garage isn't a perfect shelter for the car unless it's warm. Also, it can't be a comfortable recreation ground unless it's heated.

Funny what a difference a little warmth makes with our dispositions. isn't it?

There is a size and style of Blank Garage Heater that will transform your garage into a place of comfort for YOU and of safety for your CAR.

Write us the dimensions—approximate within a foot or so—and we shall be glad to advise you as to what Blank Heater will best suit your needs.

Form Letters Can Get Winter Business

Wire Wheel Letter No. 1

Your car has been in service quite a long time, hasn't it? It's done some pretty good work, but it's getting old, and when people pass it on the street they know it isn't as young as some of the 1917's that are skimming around the streets.

But that doesn't prevent it from being brought back into the youthful class. And this is the way it can be done. Give the car a set of shiny new wire wheels. And, if you wish, you can also give the car a coat of paint.

Then it will be as good as anything that rolls the boulevards, and people will say: "What car is that? It doesn't look look like anything I ever saw before."

We have a car that we have equipped with wire wheels and fresh paint and we wish you could see it.

Drive down and let us tell you what it will cost to make your car into a new beauty.

Wire Wheel Letter No. 2

A haircut, shave, shine and pressed clothes make a new man, don't they?

Of course, they don't make such a great difference in the real man, but they make him look like a better man.

And it's the same with a car. Even if a car is two or three or four years old it may still be a crackerjack inside, but it shows its age on the outside. One of the biggest elements in bringing a car back to its "new man" appearance is a set of wire wheels.

They add snap to any car, old or new, and you'll be surprised at the change they make. Drive down and let us tell you what it will cost to have your car equipped.

Wire Wheel Letter No. 3

It's strange how wire wheels on a car are regarded as the mark of distinction. People look at wire-wheeled cars enviously.

And it's also strange that more cars are not equipped with them when new, because they don't cost much. Probably one reason is that the man who is buying a new car is so taken up with other details that he forgets to specify wire wheels.

When a car has been run a couple of years its value and appearance can be wonderfully helped by putting on a set of wire wheels. We have a car at our place of business that is so equipped and we wish you could see how much better it looks.

The size of the wheels and tires determines the cost of this equipment, and we suggest that you drive down and let us make an estimate on the costing of giving you a NEW CAR.

Racing Body Letter No. 1

Things have moved so rapidly in the motor car industry during the last few years that some cars, only a few years old, look very much out of date.

They are perfectly good inside but they look out of date.

These cars can be brought back into the snappy modern class by the addition of a new body, and these bodies do not cost anything like what some people think they cost.

We have several styles of body that we can fit to almost any car, and if you want to know just what they make a car look like drop in and see one of our own cars that we have fixed up.

At the same time we shall be pleased to give you an estimate on what it will cost to fit your car with the style you prefer.

Racing Body Letter No. 2

Since writing you a week ago about making your automobile into a modern up-to-date car by the addition of a new body we have wondered if you would not like to have us drive to your door with a car equipped with one of these bodies in order that you may see just what they are.

The car we have equipped for the use of some of the people in our company has what might be termed a racing type of body, and before coming to you we should like to know whether you are interested in such a type.

In a short time we expect to equip a car with a somewhat different type of body and believe that might interest you more.

Enclosed is a picture of a car in its original condition and the same car with a racing body. Will you please drop the enclosed card in the mail and let us know whether this body is too racy or comes up to your idea of a snappy car?

Racing Body Letter No. 3

Did you ever see a car with a rather racy type of body without sort of wanting a car like that? You probably figured like most of the rest of us that you would like such a car but wouldn't want to go to the expense of fitting it up.

Right there is where you may have over-estimated the situation. It doesn't cost as much as you perhaps think to dress a car up in sporty 1918 clothes.

We have a line of bodies which work wonders in the appearance of cars that were built before the present line of body styles appeared. These bodies are not of the 1917 type. They are in a class by themselves.

One of them will make your car the equal and more of any 1917 model on the road. If you will drive your car to our place of business we shall be pleased to give you an estimate on making your car into a snappy modern model.

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Vulcanizing Letter No. 1

I know what car you drive and where you keep it. Also, I know your business telephone number. And on the first day snow prevents driving I am going to telephone to you for permission to—

Go to your garage,

Take off your tires,

Take them to my shop,

Examine them,

Repair all necessary tube and casing injuries,

Install reliners where essential, and

Return the tires to the wheels of your car.

This service is free and the repairs cost only the regular price—which is reasonable.

The reliners are guaranteed for 1500 miles. If your tires don't run that far I'll sell you a new tire less the cost of the reliner, which tells you my opinion of my reliners.

All you need do is say Yes when I telephone. Or, better still, drive the car in the first day you don't need it and let us prepare you against future tire trouble.

Vulcanizing Letter No. 2

Did you ever hear the story of the little hole in the levee that could have been plugged with a small stone, but which speedily grew into a big hole, then became a wash-out and flooded acres of land?

Holes in tires are just like that. A small cut lets in dirt, the dirt works sidewise, the hole spreads, water gets into the fabric, the fabric rots, the tire blows out—and you have a real tire job on your hands.

Fixing little holes is our specialty. And their repair will save you money.

We shall telephone you at the first opportune occasion for permission to examine your tires for cuts, but meantime we suggest that you bring your car to us for a day and let us fix a lot of these little holes.

It won't cost much to fix them now. But later on—who can tell?

Vulcanizing Letter No. 3

Sometimes the men who run garages and sell cars and the men who drive cars wonder what winter is for. We all would rather have it some other season.

But there is no cloud without its silver lining, and the silver lining in the cloud of winter is this: It gives you time to have your car put in shape and gives us time to do this work carefully and at reasonable rates.

Our immediate concern is for your tires. We have just fitted up a tire department and are ready for business.

Your tires probably have many little cuts in them that will become blowouts later on if not fixed now. It will save you money to give them attention at this time when we both have time for the work.

Drive down any day and we shall be pleased to give you an estimate on the treatment your tires should have.

Make Form Letters Make You Money

Radiator Letter No. 1

After a long hard summer any radiator has a bad habit of leaking. These little leaks are caused by vibration and strain. They develop everywhere and anywhere.

You are very fortunate if there isn't a little leak somewhere about the water system of YOUR car. If you have no leaks we wish to congratulate you.

But if you have a leak, no matter how small, we suggest that you bring the car to us and let us repair this injury while it is small.

Little leaks become bigger leaks and cause damage. Loss of water may cause your engine to overheat and the pistons to seize. You certainly don't want any trouble this winter.

A short inspection by our chief mechanician will enable us to tell you what your leaks amount to. Drive in any time.

Radiator Letter No. 2

Little leaks in radiators grow just like weeds in a garden.

If not remedied they do costly damage, and while small they are capable of giving you an expensive repair job.

Leaking of water may cause your motor to overheat. This may cause your pistons to seize and the cylinders to become scored—and then there is a costly repair bill.

We have radiator specialists who can find a leak and fix it without spending useless time looking in the wrong place for it or going about the work the wrong way.

If you have a leak, no matter how small, we suggest as a measure of safety that you bring the car to us and let it be fixed while the fixing is good.

Radiator Letter No. 3

Did you ever hear of pistons seizing and cylinders scoring? This means that the whole motor gets stuck fast inside.

And do you know that all this trouble occurred because the motor got too hot?

And do you know that the overheating was caused by lack of circulation in the water system?

And do you know that the lack of circulation may have been caused by the water's leaking away?

And do you know that a very small leak may have been the cause of the whole trouble?

And do you know that it doesn't cost much to fix a little leak but that it does cost a lot to fix a "frozen" motor?

If you have a little leak, no matter how small, we suggest that you let our radiator experts fix it NOW. We would rather do that than have a big repair job later on.

Truck Letter No. 1

You can drive a horse all day, but you can make him do only so much work. He has his limitations. At night he's through. He can't do any more. And all day long he can go only so fast.

A motor truck is limited, but not by its endurance powers. It can run hours at a time and go faster the last hour than it did the first hour. It never balks because of the load.

A truck can carry more than horses, can carry it farther and faster, can handle it better and cheaper, and it doesn't eat when it doesn't work.

Have you considered what a truck could do in YOUR business?

Don't you think you ought to consider this possible economy in these trying times of war and changing conditions?

To investigate will cost you nothing. Figuring with business men on business costs is our specialty, and we charge nothing for this consulting service.

Return the enclosed card and we shall be pleased to call on you with all the information at our disposal.

Truck Letter No. 2

Every dollar you save these days means so much more added to your profits.

Have you ever considered that with conditions changing as they are it is up to every one of us to figure far into the future? If we don't we may be caught at a sharp turn some day—and the results may be anything but happy.

Your hauling costs are one of your problems.

If you had no hauling costs it would benefit your business, wouldn't it?

And if you can cut down those hauling costs it will benefit your business, won't it?

Just what can be done for your business with a Blank motor truck cannot be told without an investigation of your hauling business and a comparison with those that a Blank truck might effect.

Guessing is not our practice. We don't tell you a Blank truck can help you unless it can. We shall be pleased to have one of our hauling experts consult with you without obligation on your part. Mailing the enclosed card merely requests that he visit you, that's all.

Truck Letter No. 3

Your business covers a certain territory, doesn't it?

You could do more business if you could cover more territory, couldn't you?

You could cover more territory if you could cover the ground faster and better, couldn't you?

A Blank motor truck does just this thing—it enables you to cover the ground faster and better, you are able to go farther out into the territory surrounding your place of business,

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and your business thereby is increased.

And at the same time your hauling costs are less.

We make these statements because they are generally true. But perhaps a truck could NOT do these things for you.

This can't be told accurately without a sensible and true investigation, and for the making of these investigations we have hauling experts who will be pleased to figure with you without any cost to you.

You will be interested in what this figuring may disclose even if you never buy a truck.

We invite you to ask our hauling expert to call on you. Just telephone and tell us when the appointment can best be made.

Truck Attachment Letter No. 1

Do you know that it is possible for you to have a truck without paying what a truck costs?

It is possible for you also to have a truck which operates more economically than the average truck.

How is this done?

This is the way:

You utilize your Ford plus a Blank Truck Attachment.

The motive power is the same little Ford engine that has been driving your car around town for some time. You know all about this engine—what it can do, what it costs to run it, and all about it. You are already familiar with the principal part of the outfit. We don't need to tell you anything about it.

The rest of the outfit consists of rear wheels, an axle, a drive shaft and body—and there you have a 1-ton truck. Enclosed is a booklet showing what these rebuilt Fords are like and can do, but you can't really appreciate the situation until you see one.

We have one. Drop in and see it or ask us to drive it to your place. It's running around town every day and can stop to see you any time.

Truck Attachment Letter No. 2

When a Ford gets to looking pretty bad it begins to lose standing as a touring car, doesn't it? But it is still good for many dollars' worth of service as a 1-ton truck.

You take the Ford front end, attach a Blank Truck Attachment, and away you go with a truck that can earn money for you. It can carry big loads, climb hills, operate cheaply and do things better and cheaper than horses ever could do them.

In case you haven't a Ford that you want to convert for this purpose it will pay you to pick up a used Ford and hitch it to a Blank Attachment.

We shall be pleased to assist you in securing an extra used Ford or make your present car into a truck.

Trucks are THE thing, as is evidenced by the use the government is making of them. Hadn't you better investigate this rapidly moving business trend? It is economy.

Ask our man to call and tell you more about it.

Letters Can Sell Goods—Use These

Truck Attachment Letter No. 3

We know where you can get a $1,000 1-ton truck for less than $700.

And this truck will become a money-saving profit-earning part of your business in such quick time that you will wonder how you ever got along without it.

Here is how you get this truck:

You take your Ford, which is worth, let us say, $300. Maybe it isn't worth as much as that now. It all depends on how far you have run it.

You also take a Blank Truck Attachment, which costs $377.

That's $677, isn't it? And by putting the two together you get a truck that will carry one ton.

And here's a big point. You don't have to speculate as to what it will cost to run this truck, because the front half of the truck is nothing but the front end of the Ford, and you already know all about what it costs to run the Ford.

You know about the front end. We guarantee the back end.

Ask our representative to call and tell you all about it.

Repainting Letter No. 1

Do you want to add $100 or $200 to the value of your car?

Do you want to bring the car back to its youthful appearance?

Do you want a new car without paying for a new car?

Painting and fixing up a car costs between $20 and $50, depending on the car and its condition.

And the value of the car increases far in excess of what it costs to fix it up.

Right now is a fine time to have this work done. You have days when you are not using the car and we have more time in our shop now that the rush of summer business has gone.

Will you do this? Drop the enclosed card in the mail and ask our paint man to look at your car and give you an estimate on the work. There is no obligation attached.

Repainting Letter No. 2

Soon spring will be here and the touring season will open up.

Then we'll all want our cars out on the road in the sunshine.

We all would like NEW cars every year, but if we don't get new cars we can have mighty good looking cars just by having the car touched up in the paintshop and given what we might call a "new suit of clothes."

Even if you're going to trade the car in for a new one you'll find this fixing up a good investment, for you can more than get your money back. Experts estimate that a thorough overhauling increases a car's "as is" value from 30 to 50 per cent, and it costs much less than that.

Before having any work done you'll want to know how much it costs. Drive the car to our door and we can give you an estimate in a very few minutes.

Repainting Letter No. 3

We have a proposition to make to you.

This is it:

You drive your car to our door and say, "What will it cost to have my car repainted?"

We'll have our painter look it over and say, "About $—." His price will be somewhere between $20 and $50.

And then we'll say, "And if you'll let us have the car now, while our shop is not crowded, we can guarantee a better price, and you'll soon have a car that's about as good as new and that will look as well as the newest car on the road.

Aren't you interested in this proposition? Then just drive the car to our door and let us give you an estimate.

Ford Starter Letter No. 1

The Ford winds up rather hard these days, doesn't it?

It never did wind as easily as a watch, did it? No, and it never will.

But all the hard work and walking around to the crank can be done away with if you have a Blank Starter attached.

Then all you have to do is press a button with your foot and away she goes. You have then made it more pleasant for yourself, for women and children, and anyone else you care to let drive the car. It is well known that anyone can drive a Ford, but they're HARD TO CRANK.

This starter is described in the enclosed booklet. Give it the once over and then pay us a visit.

Ford Starter Letter No. 2

You haven't broken your arm and you haven't hurt your back cranking your Ford, but you probably have got tired of the job, haven't you?

There is lots of pleasure in driving a car, but not much fun in always winding up the crank.

A Blank Starter will take all the work out of driving. All you have to do is press a button with your foot and over the motor turns.

Drive down any day and ask us about our starter proposition. It will appeal to you, we're sure.

Ford Starter Letter No. 3

How much a year do you think it would be worth to run around and crank Ford cars? We'll bet you wouldn't take the job at any price, and if you did you would get sick of it and want to quit before you had cranked very many.

But we have a little hired man that will run around with you and crank your Ford every time you want it started. His name is Blank Ford starter. He doesn't ask high wages, and all you have to do when you want the car cranked is press a button with your foot.

No more winding the crank, no more walking around in the mud to get to the front of the car, no more back-

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breaking effort on cold days. Just sit in the car and press a button.

Drive down and ask us about our starter proposition. It will appeal to you, we're sure.

Enclosed Car Letter No. 1

Cold days are here.

And because of these cold days a lot of people are going to lay up their cars and not drive. Their reason—and it is a good reason—is that it is so cold and windy that driving is uncomfortable.

But have you ever considered the comfort that lies in an enclosed car—a sedan?

In the Blank touring sedan you are protected from all the rigors of winter. You are not less comfortable than you are in your own easy chair at home.

Your hands don't get cold, your feet are warm, you can loosen or remove your overcoat, you can sit in comfort.

And when summer comes the car becomes a touring car again.

In our showroom we have a new model of the Blank sedan. Our purpose in writing this letter is to invite you to come and see it. It is the latest thing in motordom.

Enclosed Car Letter No. 2

Why let a car stand idle all winter?

If a coachman and pair stood idle all winter they would not be looked upon as much of an investment, would they? And neither is a car that can't be used every time there is a frost or a bit of chilly wind.

A car that takes all the discomfort out of winter driving is the Blank sedan. In it you are as comfortable as when in a limited railway train or in your own home.

The car is heated, is comfortable, the driver and passengers are protected; they all sit in one nice cosy little room and the winds and cold of winter cease so far as you are concerned.

There are many little comfort features in the Blank sedan which you must see to appreciate. Come to our showroom and look inside the door of this latest thing in motordom.

Enclosed Car Letter No. 3

Your big, heavy driving overcoat is too warm for ordinary wear, isn't it?

You have to have it to keep warm when driving, don't you?

But in a Blank sedan you don't need to be all bundled up. You need no gloves or mittens, no overshoes, no ear-muffs, no anti-shiver paraphernalia.

You sit in comfort. Five people are all together inside a comfortable little room—heated, protected from the winds of winter and just as cosy as though in your own living room at home.

A letter is no place to tell all the comforts of a Blank sedan. We invite you to visit our showroom and look inside this car. Sit in it. See just what an advanced step it is in things motoring.

Radiator Cover Letter

A piece of paper stuck on the front of your radiator is, in a way, a means of keeping your motor warm, but it isn't very sightly, is it? And neither is it very efficient. A real radiator cover is far better.

Our covers—and we have a full stock for all cars—are made to fit perfectly and are of heavy leather, wool lined. They have a simple strap and clasp arrangement so that you can roll up the front whenever the weather permits.

Prices are $2.50 for the radiator cover, or $4 for the complete radiator and hood cover.

You will like our service. No need to step out of your warm, comfortable car. No discomfort. No time lost. Merely shut off the gas, step on your brakes and "toot" as you reach our store. Our cover expert will run out, ask your desires, measure your needs, fetch the cover and adjust it securely.

Better stop and "toot" TO-DAY. To-morrow may be below zero.

Primer Letter

The last thing you want to do these cold mornings is the first thing that you really do when you leave your warm, comfortable home—enter your freezing garage, remove your heavy gloves, hunt up a can of gas, take off the tight spark plugs, and prime the cold cylinders.

BUT YOU DON'T HAVE TO DO IT

The EVERREADY Primer—small, cheap, handsome, at $1.25, installed free—will shoot the gas into the cylinders while you SIT AT THE SEAT.

All you do is turn a lever—no trouble, no cold, no discomfort.

Step hard on the brakes as you pass our store. We'll install the outfit for you in fifteen minutes. Our mechanic will be waiting for you TO-DAY.

Anti-Freeze Letter

Suppose, last summer, your wife left a pound of butter (worth its weight in gold) out where it could melt overnight. Would you call that extravagance and waste?

Suppose, this winter, you leave your car in the cold overnight, where it will freeze and burst the radiator. Will that be extravagance and waste?

Of course, your wife always placed the butter in the ice box. AND, OF COURSE, YOU WILL NOT ALLOW YOUR CAR TO FREEZE.

AND IT WILL NOT FREEZE IF YOU USE OUR ANTI-FREEZE SOLUTION. It's cheap and it works. 60 cents a quart. Merely mix it with the water in your radiator. It does the rest.

Stop in to-day. To-night may be below zero.

Christmas Letter

You are troubled with two problems:

"What shall I have for supper?" and—"What shall I buy hubby for Christmas?"

We do not know what you should have for supper, BUT WE ARE EXPERTS ON CHRISTMAS SHOPPING FOR MOTORING HUBBIES, and we give you the benefit of our experience, as follows:

Driving gloves	$1.00 up
Robes	3.00 "
Car heaters	1.00 "
Steering wheel hand warmers	1.50 "
Garage heaters	3.00 "
Primer devices	1.25 "
Radiator covers	1.00 "

Can you imagine anything more timely or appropriate or apt to make hubby think often and kindly of you? We cannot.

When it is cold and miserable every man enjoys comfort. The way to a man's heart, said someone, is through his stomach—and 'tis true—also, the way to a man's contentment is through his comfort.

All the above articles are in our stock. Or, if you prefer, we'll give you a certificate of money value and Hubby can make his own selection.

Christmas will soon be here. DO YOUR SHOPPING EARLY. BETTER DO IT TO-DAY.

Battery Letter

What about your battery when it is 10 below zero?

Everyone knows that heat evaporates water and that cold freezes it—but few connect these facts with the care of their batteries.

In the summer your battery needs water weekly—to keep up the evaporating supply. IN WINTER IT MUST BE FULLY CHARGED ALWAYS—when the charge runs down the solution freezes and the battery becomes ruined beyond repair.

Batteries should be kept at high charge all winter. Perhaps your battery needs recharging NOW. We'll make you a special low rate for recharging service for the entire season. Bring in your battery TO-DAY and let us test it. There is no charge for testing.

Skid Chain Letter

It costs $5 to be towed out of a snowpile.

It costs $15 to replace a broken axle.

It costs $40 to install a new radiator.

It costs $10 to $1,000 to repair broken bones.

It costs A LIFE for some accidents.

The best prevention against skids, tows, broken axles, smashed radiators, broken bones and fatal accidents.

It costs exactly $4 for a pair of skid chains for your car.

We have your size in stock. You will find them simple, convenient and safe.

Stop in to-day. There are slippery days just ahead.

Car Repair Letter No. 1

Your car has had a busy summer.

So have we.

But now neither your car nor our shop is as busy as a few weeks ago.

The summer's service has been rather hard on your car, and there are some things that need to be done to it before it is run another season.

If you will bring your car to us now for fixing and adjusting we can assure you far better service than later in

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the winter, when cars will be coming in just ahead of the spring touring season. We are always rushed then, which works to the inconvenience and disadvantage of both ourselves and our customers.

Right NOW we can give you plenty of time and attention and assure you lower prices than later on. It will assure you that your car will be ready later when you want it and will be a benefit to us in that it will keep us busy now when work is slack and relieve us of the rush when spring comes.

Please consult with us as soon as you conveniently can, because it is our desire to give you the best service and prices at our disposal.

Car Repair Letter No. 2

A few days ago we requested several of our car owner friends to bring their cars in for fixing and adjusting now and help us keep our shop busy and also to relieve us of the big load of work that comes just ahead of the spring season.

Quite a number responded and their cars are being rapidly fixed up in a manner and at a price that is highly satisfactory to them.

We have just a little leeway left in our working schedule and would like to handle a few more cars now instead of later in the season.

After a summer of use there probably are numerous little things that ought to be done to your car, and we will consider it a favor if you will let us serve you now instead of later in the season.

We have the best shop in town, capable men, up-to-date machinery, and can give you satisfaction. That we guarantee.

Drive down any day and let us inspect your car in order that you may know its real condition. Sometimes there are little things that you don't notice until they become big troubles.

Car Repair Letter No. 3

Running a car season after season without having it touched by a skilled mechanic is often considered a point of great merit in the car. But generally cars that aren't looked after once a year go to pieces all of a sudden some day and the owner can't understand why.

The reason is that the car was full of little bits of trouble all the time. They kept accumulating, but didn't affect the car's operation. Then all of a sudden they all grew big at once—and the end came.

After every season, especially one such as we have just had, your car should be looked over and at least tuned up.

It is our suggestion that you bring it to our shop, let our mechanics inspect it and advise you as to its condition.

Incidentally, we can give you better service NOW than later, because we are right between the summer and spring rushes. We have plenty of time and room to handle your work.

Drive down any day.

Oil Letter No. 1

There are two reasons why you should have in your garage a supply of oil. The reasons are:

1—So that you may have oil when you want it and thereby have peace of mind.

2—So that you may pay less for your oil than you pay when you buy it in small quantities.

In order that you may have oil in your garage we have established an

OIL SERVICE.

We will erect in your garage supports for a 15-gallon drum of oil, put a drum of oil on these supports, replace it when it is empty and keep your supply always sufficient.

In this way you get a quantity price on oil. You get just the kind of oil you want. You have it always on hand and can oil your car whenever you want to and not when you HAVE to.

Return the enclosed card and we shall be pleased to call upon you with full information about this service, its cost and how it is handled in detail.

Gas Engine Letter No. 1

How many times have you wished you had engine power of some kind?

Don't you get tired of using muscle power and doing things in twice the time they could be done if you had power of some kind?

There are things you have thought of that a gasoline engine could do, and there are many things a gasoline engine could do that you probably never have thought of.

The Blank gasoline engine is one of the most efficient little power producers going and could serve you in a great variety of ways.

Just to investigate the situation will you not request us to visit you and point out the things an engine could do for you, how and where it could be installed and how reasonable its cost is?

Drop the enclosed card in a mail box and we shall call on you without any obligation to you.

Gas Engine Letter No. 2

Go cut some wood.
Go draw some water.
Go run the washing machine.
Go run the fanning mill.
Go turn the grindstone.
Go run the churn.

Wait! Wait! Not so fast. Don't be in a hurry to do all that hard work. What's the use? It may develop a fine muscle, but it won't make you live any longer, and while you're doing all those things you might be doing something that can't be done by a Blank gasoline engine.

You can connect a Blank engine with most of the work about the place. It works summer and winter—never tires; is a regular slave, and its cost is small.

Drop the enclosed card in a mail box and, without any obligation to you, we shall be pleased to tell you what a motor costs and how it could be rigged up to connect with the various jobs you have to do.

Don't work so hard. Boss the job and let the motor do the work.

Gas Engine Repair Letter No. 1

How has your motor been working?

Sometimes little things go wrong with a gasoline engine and, while they seem like big troubles, they aren't much to a motor expert.

And sometimes there are little troubles that one doesn't know about yet which may prove serious and costly later on if not cared for when the troubles are young. A motor expert can listen to a motor and give you a good idea as to what its condition is.

We have a motor expert who is willing to listen to your motor run and advise you as to its condition. Then, if you wish anything done to it, we shall be pleased to consult with you about the work.

If you will state on the enclosed card—

a—Where your motor is,

b—What make it is,

c—What work it has done since last inspected,

inspected.

quick and accurate inspection.

May we have the card by return mail? Mailing it puts you under NO obligation.

Gas Engine Repair Letter No. 2

After a summer of service your gasoline engine should be given a careful inspection. A season of work often sets little things awry that should be given attention.

A gasoline engine, you must remember, is nothing but a piece of machinery and, like any other machinery, it should be given a careful inspection every so often in order that little troubles may not be permitted to become big.

A regular inspection will make the motor last longer, will cause it to run more economically and will save you money.

An inspection costs you nothing, and even if our expert should discover trouble you are under no obligation to have the work done by our shop.

Return the enclosed card and we shall be pleased to give you the benefit of our expert's advice without charge to you.

Gas Engine Repair Letter No. 3

Wouldn't you feel better satisfied about your gasoline engine if you were confident that you were an EXPERT and were sure everything about it were all right?

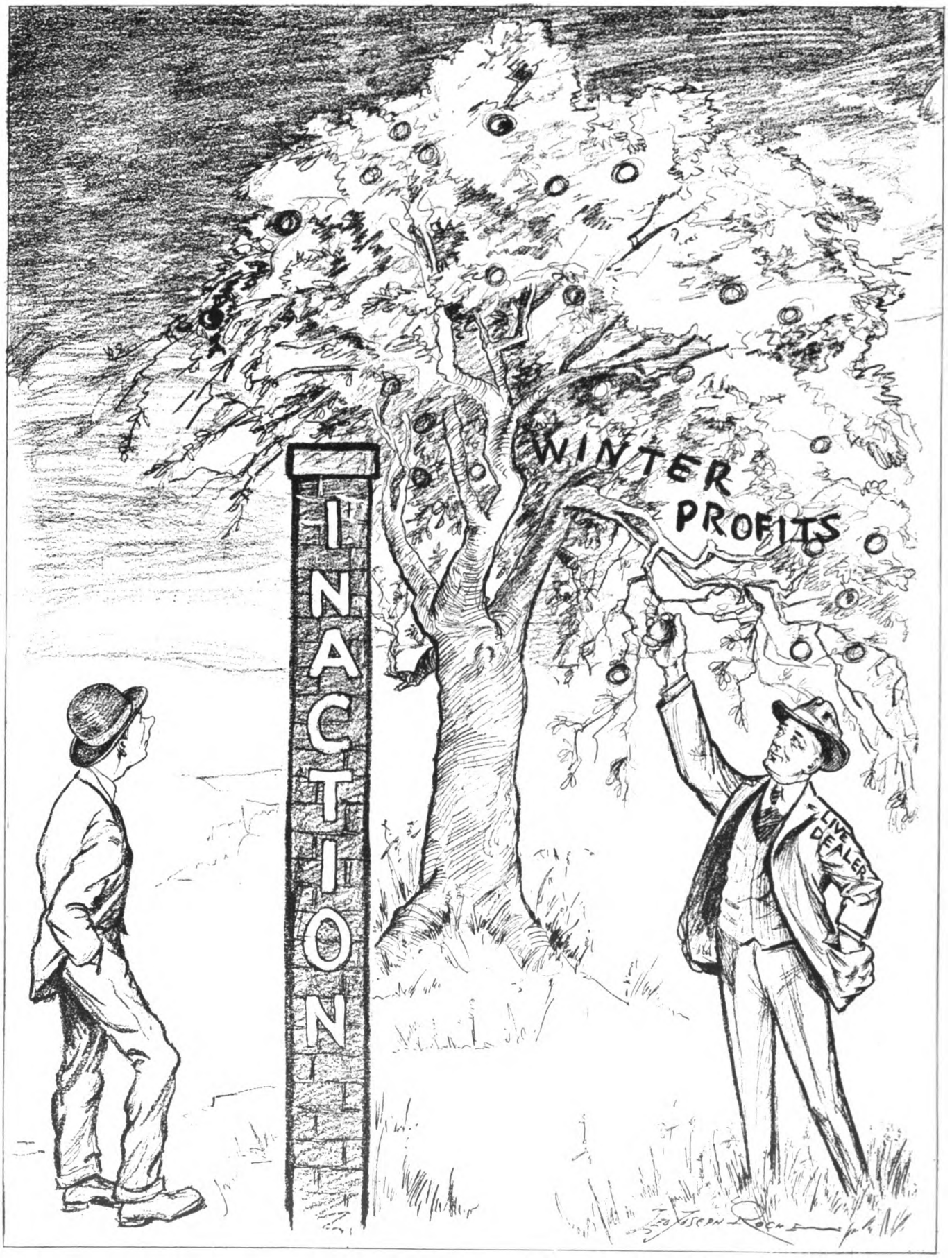
Of course, you know a great deal about your engine, but there is nothing so satisfying as having the opinion of an expert, especially after the engine has been given a season of hard work.

Our expert will be pleased to examine your motor without obligation or charge to you. Then, if there is any needed work and you care to give it to us we shall, of course, be glad to have it. But you don't have to get it done if you don't want to or you don't have to give it to us.

Return the enclosed card and our mechanician will call on you, inspect the motor and give you the benefit of his experience.

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The Wall Between



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How to
Sell Any Accessory

1—HAVE the accessory conveniently located so you can get your hands on it without making any great effort.

2—Watch for an opportunity to show it. This generally comes after the prospect has bought what he came in after and is waiting for his change or his parcel or buttoning his coat preparatory to going out.

3—Say: *"Have you seen this?"* or *"Just take a look at this."* At the same time, get the thing in front of the prospect's eyes. Do not say: "Have you seen our new spotlight?" and then wait for his answer before you produce it. Pull the article out or maneuver him in front of it at the same time you ask the question. You then have his attention.

4—Endeavor to get him to handle it, operate it and see for himself just what it does, at the same time that you explain. This arouses his interest. At the same time, you are able to analyze his case, that is, find out what car he owns and so forth, and from this knowledge formulate a special argument as to why he should have this accessory.

5—Picture to him the things the accessory will do for him. Do not go into lengthy descriptions of what it is made of, who made it, what a fine man the manufacturer is and so forth, because the things the prospect is interested in are what the accessory can do for him after he buys it. In the case of an anti-glare disk, tell him how it will save him from running into a ditch when someone's headlights are in his eyes. He is deeply interested in that phase of the question, but he doesn't care a hoot about what the disk is made of or who made it. Proper portrayal of the accessory's benefits to the prospect arouses his desire.

6—If it is something easily attachable to his car, invite him to go to the car, if it is at your store, and show him how easily it goes on. If it is something that need or need not be wrapped up, ask him if he wishes it wrapped or wants to carry it in his pocket. If there are two styles, ask him which style he wants. Endeavor to get him to indicate a preference for something and as he indicates this, take the selection he makes and start to wrap it up or attach it to his car or take whatever step is the next step in the sale. By going ahead progressively in this manner, a customer will often hand over the money and take the article, whereas he would say no, if you would bluntly ask him, "Do you want to buy this?" This last paragraph, No. 6, prompts action and that is all there is to a sale:

a—Attention. *c—Desire.*
b—Interest. *d—Action.*

MANY a time a car owner comes into your accessory department, makes a purchase and then spends an idle minute or two while waiting for his change or waiting for the parcel to be wrapped up.

This couple of minutes is a gold mine for you, if you use it.

Instead of talking about the weather or letting the prospect stand and look at the ceiling, you should take some accessory out of the showcase and endeavor to interest him in it and sell it to him. Don't take it out and say, "Do you want to buy this, Mr. Prospect?"

There are good ways and bad ways to carry on this selling conversation.

In order to assist as far as possible the accessory salesman who may not have worked this extra business down to a fine art, a few suggested selling conversations are given on the pages that follow.

Perhaps these cannot be used verbatim, but unless the salesman has a better line of argument, it is worth while going over these thoroughly and learning, at least this one way to do it.

Cold Weather Made Profitable

How to Sell Engine Thermometers

A SALESMAN takes a thermometer from the showcase and says, "Have you one of these on your car?" There doesn't have to be a great deal of explanation about what this is because most people know exactly what they are. Tell him this:

"This is a mighty good investment. A few years ago no one had them, and now nearly everyone has them and those who use them say they can't see how they ever did without them. Of course, the thermometer will tell you when your engine is too hot in the summer time, but it is just as valuable in the winter time because it will tell you when your engine is too cold.

"In winter time, the thermometer should be kept up to a pretty good height and you can see from your seat exactly what the temperature is. In case you find it is running too low, all you have to do is run your motor hot for a while until the mercury climbs up and then go back to normal driving.

"This thermometer is made to fit your car and all that is necessary is that you remove the radiator cap and screw this on in its place. Would you care to have me remove the radiator cap and wrap it up for you in a little package so you can carry it home in your pocket. There may be a little rust or dirt on it?" If the prospect is going to buy, he will display interest at this point and the sale may be closed.

Cold Weather Made Profitable

How to Sell Car Primers

AS the salesman hands the change from a previous purchase, to the customer, he picks up an engine primer in its box, places it on the counter and says:

"Did you ever see one of these things? One of the boys sent it to me and I haven't had a chance to take a good look at it yet."

The average customer will pick it up, look at the label on the box, perhaps, and say, "Oh, yes, engine primer. It makes the car start easier in cold weather."

The salesman picks the primer up, looks at it and as though he never had seen one before, says: "Makes the car start easier?" The average owner will then begin to explain how the thing works. The salesman then repeats what has been told him, something after this fashion.

"Yes, that's what the man that left it said. It puts the gasoline where you need it and saves the battery on these cold mornings. Wonder if it is much of a job to install it."

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The average owner will then look at the directions and explain that all you have to do is do so and so. In fact, the owner can be made to tell you the price of it, tell you what a good thing it is and do all the selling talk itself.

In case he doesn't then volunteer to buy the thing, the salesman may say, "Why don't you put this on your car and see how it works? If it does all it says it will, it certainly will save you a lot of trouble these cold mornings, and if it doesn't work, I want you to bring it back and let us know about it. If it is a good thing we are going to recommend it."

(This plan cannot be worked with all accessories, but it can be worked with many. The prospect is made to sell himself and he is tickled to death to think that he is such a smart man to tell you something about the stuff that you are selling.—Editor.)

Cold Weather Made Profitable

How to Sell Hand Warmers

A WARM hand wheel or a hand warming attachment mounted on a wheel should be erected on the counter with an electrical attachment so the device can be demonstrated. When a car owner comes in some frosty day with his fingers perhaps tingling, smile and say:

"Cold day, isn't it, Mr. Prospect? Step over here until I warm your fingers for you. Just take hold right here, one hand on each side just as though you were driving your car. You see, all I have to do now is touch this little switch and right away the wheel gets warm at the points where you take hold of it, the inside of your hand is warm, all the blood in your body is warmed by passing through your hands within a few minutes, and really, it is surprising how warm all over you can be if you can only keep your hands warm while driving.

"Isn't that quite comfortable, Mr. Prospect? You know, it adds a great deal to the comfort and also to the safety of driving these chilly days if you can keep warm. You are able to control your car better and are more sure of making the motions you set out to make if you are not cold.

"We have put these on quite a number of cars and they are proving to be one of the most popular things we have in the store this winter.

"I'll tell you, Mr. Prospect, people aren't putting up with the discomforts they did a few years ago. There was a time when you would do all sorts of things around your home that were inconvenient and uncomfortable but you don't do them any more and neither does anyone else. You see, in putting this on your car all you have to do is ———."

Then explain how simple and easy it is to install the device and if it is possible to put it on while the car stands in front of the door volunteer to assist in putting it on if you have time. You might have a man about the store who could do this work.

Cold Weather Made Profitable

How to Sell Anti-Freeze

BESIDE the gasoline pump have a box in which two bottles are placed with their tops projecting through a hole in the top of the box in such a manner that the tops will not fall down in case the bottles break. Fill one of these bottles with anti-freeze and the other with plain water. Let them out some freezing night and the bottle of water will break, leaving the top part hanging in the top of the box.

Under the water bottle, put a sign saying, "THIS FROZE." Under the anti-freeze bottle, put a sign saying, "THIS DIDN'T."

How about your radiator these cold days and nights?

When a car owner drives up for gas or for anything else, call his attention to the exhibit. While you are pumping the gas or after you have pumped the gas, say, "How is your radiator? Does it need any water?" At the same time unscrew the cap and look in. Take a good look down through the hole and say:

"What is that, Mr. Prospect, plain water in your radiator?" If he says yes, then say:

"The days are getting pretty cold and the nights are a lot colder and you really ought to make sure you aren't going to have a freeze-up some night and with it a good sized bill for fixing your radiator.

"We all, of course, take precautions when the weather gets really cold, but most of us don't take protective measures until it is sometimes too late.

"It's a pretty good time to get the proper solution in your radiator as soon as frost comes. Then you are safe.

"You probably have noticed the broken and unbroken bottles in that little box. The unbroken bottle contains what we have found to be the best anti-freeze solution we can get. If the day should be a little warm, this compound will not boil and let the engine overheat and it won't evaporate until there is so little left that the radiator freezes. And it doesn't leave a sediment in the tubes.

"Look at the solution, Mr. Prospect, see how clear it is, no sediment, although it has been standing there for five days and nights, and, furthermore, if you wish, we can flush your radiator out right now and fill it right away. It will take only a few minutes. Then you won't have to worry over every little cold snap."

Don't tell the man the price unless he has interest enough in the solution what it will cost to fill his radiator, and after you have told the price do not let that be the last thing said. Make a few more remarks about the saving that the solution may effect in the repair bill. However, if after naming the price the prospect seems about to give the order, do not say so much that you talk him out of it.

Cold Weather Made Profitable

How to Sell Windshield Cleaners

THESE can be demonstrated in the store or in the street. If they are to be demonstrated in the store, you must have a windshield mounted on the counter on a rack and must have convenient a small atomizer which you can buy in any drug store for the purpose of spraying water on the shield. The cleaner is attached in the regular way. If it's a nasty morning with rain, mist or snow, you have a fine opportunity for beginning your sales talk by commenting on the weather.

In any event, when the prospect is near the windshield cleaner, say: "Have you seen these windshield cleaners, Mr. Prospect, which are being used now as equipment on some of the newer cars? They have not been on the market a great while, but are proving a very desirable affair.

"You see, you are driving along the road in a rain or snow storm and it collects on your windshield like this (squirt water on windshield), all you have to do is move the cleaner like this (move it) and you have a perfectly clear vision.

"Just a touch on this cleaner once in a while and you always have a clear view of the road ahead. This one will fit your car and we can put it on in about five minutes. Let us see just exactly where you want it attached." In attaching it, ask the owner to sit behind the wheel while you move the device until it just suits him.

How to Sell Spotlamps

Contributed by W. B. Swann of the Charles H. Touzalin Agency, representing the Howe Mfg. Co., Chicago.

A lamp should be mounted on the counter and electrically connected and so placed that it can be reached and operated by the prospect.

"FINE looking lamps, aren't they? Neatly constructed in every way and finished as nicely as your car. What car do you drive? A Studebaker? This lamp will fit it perfectly. See these clamps? One of them is made purposely to fit the windshield frame of every car—of your car.

"Selling many spotlights? Why we are selling hundreds of them. They have grown in favor to the point that they are a necessity. If you do much country driving you have felt the need of a light that can be moved. You have wanted to read sign posts along the way; coming to dangerous turns you have wondered if there was a car coming around the bend. You have crept along the narrow road with a steep embankment wishing that you had a light that would enable you to watch the side of the road more closely.

"When a car is approaching from the opposite direction, you are dangerously handicapping him, as he is you, if glaring headlights are shining forth. A spotlight under these circumstances permits both cars to extinguish the blinding light, for sufficient light for both will be produced by the spotlight. When you have had a blow-out at some dark, lonely spot, you have wished for a strong light to do the fixing.

"On a stretch of bad road you have wished that you could have discovered those sink holes and bumps quicker, in time to escape the shaking up. All of these needs and a good many others are answered by the spotlight.

"Inasmuch as the spotlight is needed because it is movable, its utility is increased by the ease with which it can be directed. The spotlight displayed is of a special advantage because of its wonderful spring controlled bracket, which permits it to be turned in any possible direction with a mere twist of the hand. Because of the coil spring construction, the lamp stays wherever it is directed until again moved.

"Incorporated in the knob of the lamp is an 'off and on' switch which turns with the same movement that the lamp is directed and operates so easily that it can be done with the gloved hand. The wire is protected in the bracket, making it immune from short circuiting and removing the inconvenience of dangling wires. Loosening one set screw releases the lamp for removal to use as a trouble lamp.

"The lamp at the left with the mirror is the one most largely sold and sells for $8. The same lamp at the extreme right without the mirror sells for $7.50 and the single shell lamp in the center sells for $4. We have this same lamp with rear view mirror selling for $4.75.

"Let us put one of these lamps right on your car. It will take only a few minutes and you will be fixed up with the convenience of a perfectly directable light for the life of your car."

(In addition, Mr. Swann states that two spotlights are often desirable and gives the following—Editor.)

Ten Reasons for Two Spotlights

Glareless driving light with other light free for—

1—Watching the side of narrow, dangerous road.
2—Reading road signs in passing.
3—Seeing around sharp turns.

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4—Flood of light both sides for backing car.
5—Multiplied light for seeing through fog.
6—On bad, crooked road passenger can assist driver by operating right hand lamp.
7—Instant inspection or trouble light on two sides.
8—Wonderful light for lawn parties, picnics, etc.
9—Improves appearance of car, giving better balance.
10—Two sales for the trade where one grew before.

Cold Weather Made Profitable

How to Sell Foot Warmers

ARRANGE a demonstrating model in your store. In case the warmer is of the cnarcoal type, the demonstration will do much to convince the prospect that he isn't going to set his car on fire by using the device.

Unless you have steam or hot water heat in the store, it may be difficult to arrange a demonstrating model of an exhaust heater. However, tax your ingenuity a little and see if you cannot rig one up. When you get an opportunity say:

"Don't your feet get cold once in a while these frosty days, Mr. Prospect?" The average motorist will admit that such is the case, unless he is already equipped with a heater. "I want you to look at a little device we have just put in and tell me what you think of it."

Then bring out your heater. "This heater consists of so and so (explain its operation.) It is one of the greatest little comforters you ever ran across. You can put it under your robe on the floor, you can set it out in the open on the floor if your car is all closed in and you can even use it about the house for various purposes.

"When you get into the car, just let me slide this under the robe for a minute and see how comfortable it makes you. You know, Mr. Prospect, it is surprising how unwilling people are these days to put up with some of the uncomfortable things our dads used to.

"Nowadays, if there is any way of being made comfortable, we are determined to have it and I guess probably it is a pretty good investment in the end because we are able to work better and are more contented and we seem to be a lot better off in the long run. Let's slip this into your car for a minute, just so you can see how it works." At this point, take the heater in your hand and start for the man's car. Don't hesitate. In practically every case he will follow you and let you do what you said you were going to do.

In the case of an exhaust heater, you cannot, of course, demonstrate like this but your sales talk can be much the same and you can go out and show him just where the heater will fit in his floor. You can then offer to install it for him, and once you get it into his car try not to have to take it out.

Cold Weather Made Profitable

How to Sell Gloves

AS the weather begins to get cold and people come in who have no gloves or are using old gloves, pull out a pair at the right interval in the conversation after the man has bought what he came in to get and say: "Just put your hands in these, Mr. Prospect, and tell me what you think of our new line of gloves. They are so and so (here describe the gloves briefly.) They are the most comfortable things you ever had on and they are very warm. Let me take that price tag off, you don't want to wear them away with the tag on, do you?"

How to Sell Radiator Covers

SAY: "How's your car running these days, Mr. Prospect? I suppose it gets rather cool once in a while these frosty mornings and it doesn't warm up very fast after you have left it standing at the curb for a while."

"One of the best ways of protecting a motor and radiator and keeping them warm these days is with a radiator and hood cover. They are just like a blanket on a bed: they keep the heat in and the cold out. What car are you driving? Oh, yes, we have one that will fit your car." (Pull it out and show it to him.)

"See, it not only is nice and thick and warm with soft felt padding on the inside, but it is made of good material on the outside and really adds to the good looks of the car. You know, we all look different and a little bit dressed up when we put on a new overcoat. Well, it's just the same way with a hood cover. It makes the car look different and all dressed up.

"These are very easy to attach, and just to show you how easily it is done, let's slip it on your car." At this point, start toward the street or garage, if his car is there, and proceed to put it on.

After it is on, step back a few feet from the car and say: "There, Mr. Prospect, just step back here and see what a dressed up appearance that gives the car, doesn't it? And you will find you can start your motor much more easily these cold days. You will be surprised how long a cover like that will hold the heat and you see, you can adjust the front up or down according to the temperature, and your moto-meter shows whether you need to run the temperature.

Cold Weather Made Profitable

How to Sell Seat Covers

"HOW long have you had your car? Mr. Prospect?" If he says, it is new, tell him: "There is nothing prettier than a new car and you certainly want to keep it looking new. If you preserve its good looks, it will be money in your pocket because the car will always be worth that much more. It's an easy matter to let a car's good looks run down, especially in the winter time, and one of the things that goes first is the upholstery.

"Have you ever considered fitting the car with slip covers? They work like this. (Pull some out.) You see, they slip right on over the upholstery and there are fastenings along here and here and the upholstery is entirely protected from the rain and snow and cold.

"Many people use slip covers on their cars summer and winter because the dust of summer is more easily taken out of slip covers than it is out of upholstery and putting on new slip covers some day won't cost anything at all as compared with putting on new upholstery.

"If you care to have us, we will attach these to your car in a very short time and assure you the protection to which your car is entitled. You certainly should give it good care and not let its value decrease merely because of the looks of the upholstery."

In case the owner has had the car some time, advise as follows: "Do you use slip covers? You will be surprised how much they will add to the appearance of your car and how much more like a new car they will make it feel when you sit in the seats and if you ever want to sell the car, it will add to its value much more than the price of the covers if it is all trimmed up in nifty shape with these fittings."

Don't Forget *Your* Liberty Bond

Cold Weather Made Profitable

How to Sell Caps

"I WISH you would step down here a minute, Mr. Prospect. We have just put in some winter driving caps and have several different styles. We intend to put in more and are anxious to find out just which style seems to be the most suitable. We have one here that is made of—and it works like this. Just slip it on.

(When you say this, hold the cap up as though you were going to put it on the prospect's head, whereupon he ordinarily will remove his hat and let you try the cap on.) This one works like this. (Adjust the cap in its different positions, let the prospect look at himself in a mirror and so forth), and then ask, "How do you like that cap?" Then say:

"We have another one here that is somewhat different. Just let me show you how this one works." Then slip this cap on him, manoeuvre it as you did the first one, ask him how he likes it, show him one more cap and then ask him which of the three he likes the best. Say:

"Which of these would you want, Mr. Prospect?" When he indicates a preference, tell what a fine cap it is he has selected and point out its comfort features. In case it is absolutely impossible to sell him, tell him you thank him very much for his opinion of the goods.

Cold Weather Made Profitable

How to Sell Glare Stoppers

HAVE one of these mounted on a windshield on the counter and a short distance away have a headlight directed at the windshield. Have a switch near the windshield so you can turn the headlight on and off. When the prospect is near the windshield, snap the switch on and say to him:

"Just see how bright that headlight is back there, Mr. Prospect? Doesn't that blind you? And now just step over here and look at it through this little disk and see what a difference it makes. You ought to have one of these on your windshield. It is all right to have special lenses in your car, but you never can tell what the other fellow is going to do.

"In case he keeps his light in your face, you can see absolutely nothing and you never can tell when you are getting over too close to some deep roadside ditch. But with one of these little disks on the windshield, you can look anybody's headlights in the eye and still see just where you are going. And they are so easy to put on and take off.

(Take it off and put it on again.) Then take it off again and hand it to the prospect. He will probably ask its price. Tell him and then remark:

"But that can't begin to compare with what it might cost in case you slipped off the road some night, can it?" Let me take it out and when you go out I'll fasten it on the car for you myself if you want me to, and help you pick out just the right spot for it. There is a little trick to locating it.

"You see, you want to get it where it isn't in your ordinary line of vision, but where you can easily get your eyes behind it by just shifting your head a little." Get him to experiment as you place it on the windshield in your store and then proceed to make out the sales slip for it.

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Winter Business Accessories

"See, Winter comes to rule the varied year," says the poet. But don't you believe it. Business is going to rule this part of the year—Winter Business.

Radiator Covers

Campbell

Campbell makes a number of different styles as follows: Nos. 1 to 4, radiator and engine cover, waterproof fleece lined for Ford with a door which rolls up; Nos. 5 to 8, radiator and hood cover made of three-ply material insulated, outside being waterproof imitation leather, the inside kersey blanket material and a layer of asbestos between; Nos. 15 to 18, radiator and engine cover made of two-ply material for Fords, the outside being waterproof imitation leather and the inside kersey blanket; Nos. 20 to 71 are radiator covers and engine covers lined or insulated and for larger cars. Prices range from $1.30 for the No. 2 cover to $6.12 for a radiator and hood cover for larger size cars.—Perkins-Campbell Co., Cincinnati.

Antidam

The Antidam cover is made for all makes and models of cars, having straight front radiators. The name and model of car must be given when ordering. The cover is artificial leather and sheet steel lined with heat retaining, wool felt cloth. The distinctive feature is a door in the shape of fan blades which may be adjusted to give the desired draft to keep the radiator at the proper temperature. Prices are $5 for the small size, Ford, Maxwell, Vim, etc.; $6 for medium size, Overland, Buick, Dodge, Reo, etc., and $7 for larger sizes.—Glover Equipment Co., Indianapolis.

Phillips

These are made in all sizes and styles to fit all cars. Name of car and model should be given when ordering. Both radiator covers and hood covers are made separately or combined.—Phillips Auto Seat Cover Co., 244 West Forty-ninth Street, New York.

Simon

Two-piece covers are held together with black japanned curtain fasteners so the radiator section can be used alone. Covers are made from special patterns for any car. No. 72 is made of drill with kersey lining, and No. 92 is duck with heavy felt lining. Prices of No. 72 are: Old Ford, $3.60; 1917 Ford, $4.20; four-cylinder cars, $6; 6, 8 or 12 cylinders, $7.50. Prices for No. 92 are respectively, $4.80, $5.40, $7.50, $9. Another style is made so it can be used on Maxwell, Chevrolet, Dodge, Metz, Dort, Vim, Buick 4, Saxon 4, Regal 4, Studebaker 4, etc. One buckle is loosened to lift up the hood. Prices are slightly lower than for the other style.—S. C. Simon & Co., Philadelphia.

Frost King

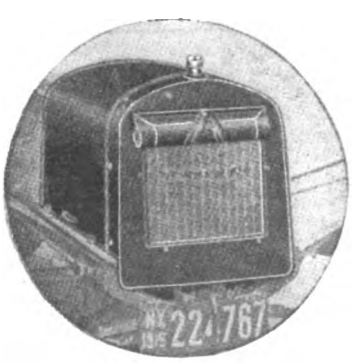
This radiator and engine cover is waterproof imitation leather outside with kersey blanketing inside and a layer of heavy asbestos between. It is made for all makes of cars, prices varying from $2.75 for the radiator cover alone to fit a Ford to $10 for the radiator and hood cover combined to fit larger cars, such as Packard, Stutz, Winton, etc.—Cincinnati Auto Specialty Co., Cincinnati.

Hopewell

Hopewell covers are dull finish enamel drill face lined with heavy padding, and have an adjustable ventilating flap which may be raised in moderate weather. Covers for V-shaped radiators for Fords can be furnished. Prices vary from $1.25 for a Ford cover to $8.75 for a combination radiator and hood cover for a large car.—Hopewell Bros., Watertown, Mass.

Gates

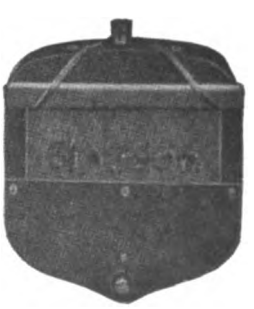
Gates covers are made in all sizes and styles of two materials, enamelled drill



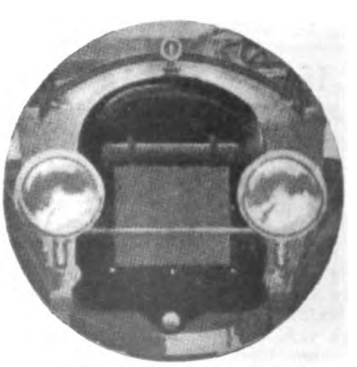
McKinnon



Gordon

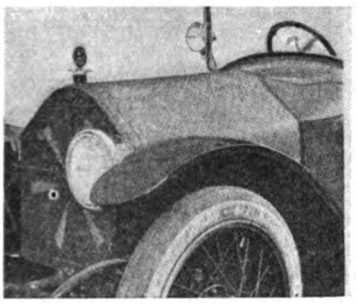


Gordon



Phillips

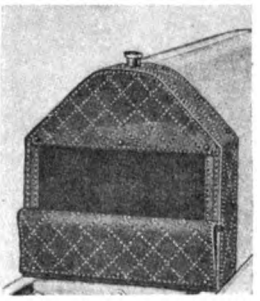
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Antidam



Simon



Campbell

and Du Pont leather. There is a flap which may be opened in moderate weather. Prices vary from $1.20 for a Ford radiator cover and $2.50 for a radiator and hood cover complete to $11.50 for a combined radiator and hood cover for a large car such as the Packard.—Gates Mfg. Co., Indianapolis.

Nathan

Nathan covers are made of fabric leather substantially lined with kersey felt. The front flap opens down, affording protection to the cold water at the bottom. The radiator cover alone is $5.50 and the combined radiator and hood cover $11. Covers are made for all styles and sizes of radiators.—Nathan Novelty Mfg. Co., New York.

Gordon

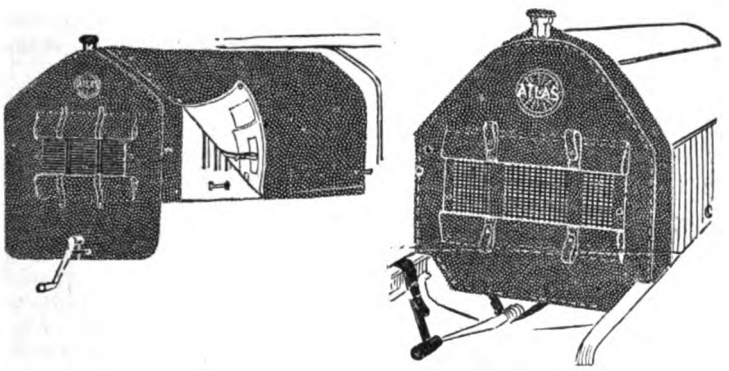
Two grades of Gordon radiator and engine robes are made, both being waterproof and heavily lined. The hood may be raised without disturbing the hood cover. The front curtain may be opened.—J. P. Gordon Co., Columbus.

Allen

The Allen cover is made in fabric leather lined with robe plush, the flap being held in position by ball and socket buttons. Covers are made only on order and when the name and year of car are given. Radiator covers alone for Ford cars are $4.50 and for other cars $7. Combined radiator and hood covers for four-cylinder cars are $12 and for six-cylinder cars $15.—Allen Auto Specialty Co., New York.

Invincible

Peters & Herron are preparing to furnish radiator covers for all models of cars at reasonable prices. Covers are hand tailored with a special kersey lining with a black waterproof exterior finish. Some styles have flaps which may be rolled up and others have flaps which are held by snap buttons. No straps or buckles are used. A special device fastens the cover to the hood.—Peters & Herron Dash Co., Columbus.



Two styles of Atlas radiator cover

Atlas

These are made of artificial leather heavily lined with kersey and have a two-section curtain. The lower section rolls up half way and the upper section rolls down half way, thus affording partial protection when desired. These are made to order to fit all cars and for straight front radiators cost $4.75 in fabric leather and $3.75 in artificial leather. An additional charge of $1.25 is made for V-type radiators. The combination hood and radiator cover sells for $10.75 in fabric leather and $8 in artificial leather. Hoods for Ford cars sell for $1.50 to $2, according to the quality, and a combination radiator and hood cover for Fords is $4.—Atlas Specialty Mfg. Co., Chicago.

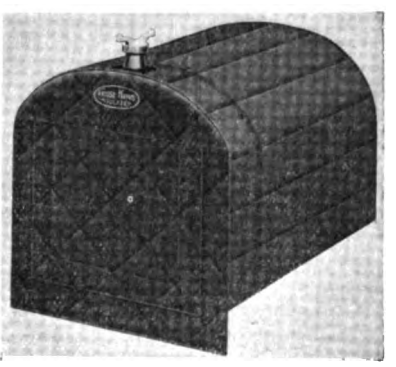
Primers

Perfection

This primer is operated by and simultaneously with any electric starter. It is so connected that when the starter button is pressed, a charge of raw gasoline is injected into the intake manifold and shot down in a spray toward the carbureter. The primer has a miniature magnetically operated pump which is connected to the ordinary current source on the car. The device is not difficult to install. Price $5.—Motor Cooling Systems, Baltimore.

Maltby

This primer consists of a miniature pump which draws fuel from the feed pipe and injects it into the manifold in a spray. This spray breaks the fuel up thoroughly and assists in easy starting. It is controlled from the dash. Price $7.50.—Maltby Auto Specialty Co., Detroit.



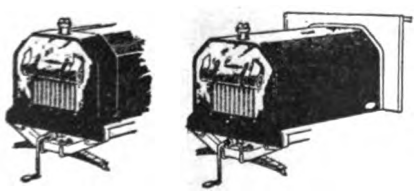
Frost King

Modern

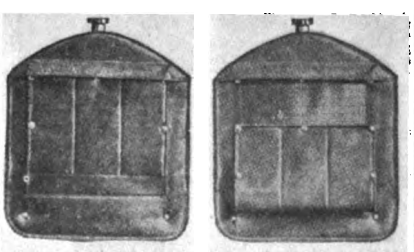
The Modern primer consists of a small pump mounted on the dash and drawing gasoline from the main line. The fuel is forced into the intake manifold. Price $5.—Modern Specialty Co., Racine.

Spray

The Spray primer is a small injector pump, the operating button of which is attached to the dash on floor boards, and the cylinder pump container about 3 in. long, is under the hood. Pressure on the pump forces a small quantity of gasoline into the intake manifold in a spray. Price $7.50.—Spray Primer Co., Boston.



Two Hopewell Covers

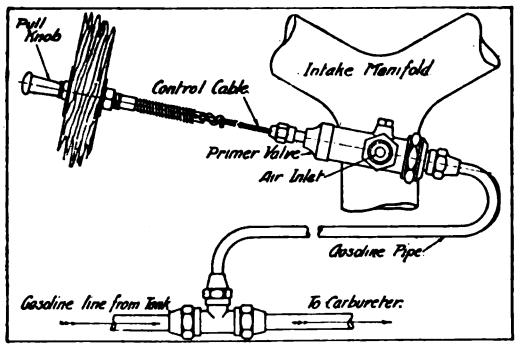


How the front of the Allen is adjustable

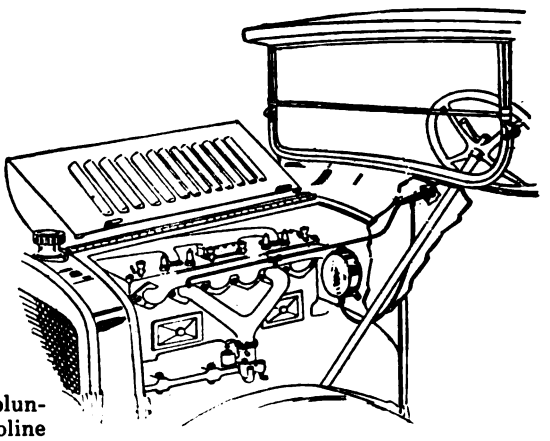


Nathan

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Left — The Copley primer for easy starting. Right — Installation of the Imperial primer



Thermo-Electric

This is a combined heating device and primer consisting of a threaded plug which is screwed into the intake manifold. The heating portion is connected to the current source on the car. When the switch is turned, the heating portion becomes heated to 350 deg., a further turn of the lever opens the needle valve; then when the starting motor is operated, suction draws gasoline into the heated chamber where it is converted into steaming vapor which fills the intake pipe and cylinders, thus facilitating easy starting. Price $5.—New York Coil Co., New York.

Copley

The Copley primer is attached to the intake pipe of the engine and connected to the gasoline line back of the carbureter. The priming valve is opened by pull knob on the dash and closes automatically when the dash pull is released. The primer delivers a rich mixture and the action is continuous as long as the primer is held open. It is, in fact, virtually an additional carbureter. It can be installed in 30 min. Price $5.—Bay State Pump Co., Boston.

Prest-O-Lite

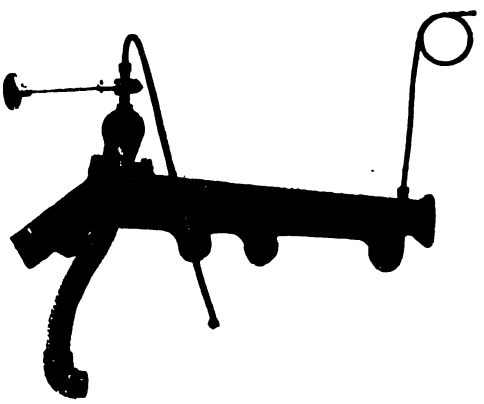
This primer differs from others in that it uses Prest-O-Lite acetylene gas instead of gasoline. A small tank of gas is mounted on the runningboard and the primer valve serves to admit the proper quantity of gas into the intake manifold to facilitate starting. Price, complete, $8.50.—Prest-O-Lite Co., Indianapolis.

Imperial

The Imperial primer which is operated from the dash, consists of a small plunger pump, a high test auxiliary gasoline tank and the necessary tubing. The pump draws high test gasoline from the auxiliary tank and forces it into the intake manifold.—Imperial Brass Mfg. Co., Chicago.

Crone

This is a miniature plunger pump which draws fuel from the main line and forces it into the intake manifold. One stroke of the pump supplies sufficient fuel for a proper mixture to start. The pump plunger has a positive shut-off. A number of styles are made for various makes of cars. Price $6.—F. G. Crone, Buffalo, N. Y.



Hiatt Manifold

Piston Rings

Leak-Proof

This is a concentric, compound ring consisting of two concentric sections or halves of angle iron. Each section seals the opening in the opposing member so that leakage of gas is impossible. The sections are so constructed that the pressure on the cylinder walls is uniform at all points in the circumference of the rings. They are made in all sizes and widths.—McQuay-Norris Mfg. Co., St. Louis.

Burd

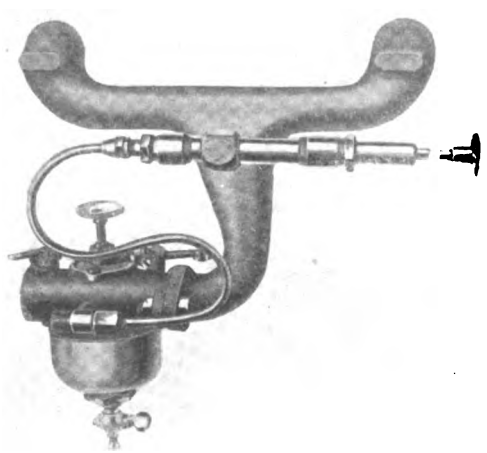
This is a one-piece concentric ring with the opening between the ends sealed with a coupling or metallic guard. This coupling rests on two shoulders formed on the ring ends and is held firmly against the cylinder walls. Rings are made of fine gray iron, ground. Prices, 2½-in. and under, $1; up to 3½-in., $1.25; up to 4½-in., $1.50; up to 5½-in., $1.75; up to 6½-in., $2; up to 7½-in., $7.25.—Burd High Compression Ring Co., Rockford.

Micro

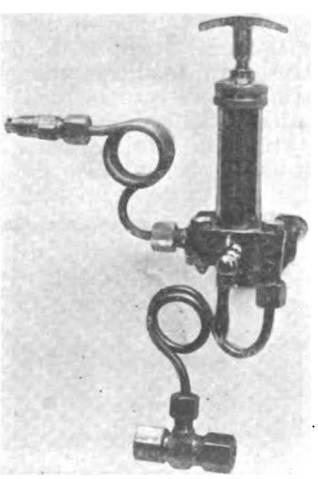
The Micro is a compound concentric ring in which a single concentric ring carries a smaller concentric ring in a channel on its outer surface. The rings are so placed that the joints are diametrically opposite, each sealing the opening in the other. Castings are fine gray iron, individually cast and ground to final shape.—Micro Piston Ring Co., 1960 Broadway, New York.

Gill

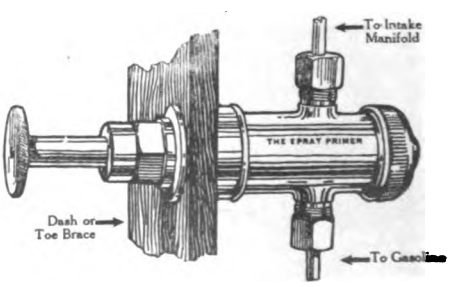
This is a one-piece concentric ring with an interlocking lap joint. The joint is self-sealing and the rings are single piece castings with special gray iron, machined and ground. It is said



Maltby primer

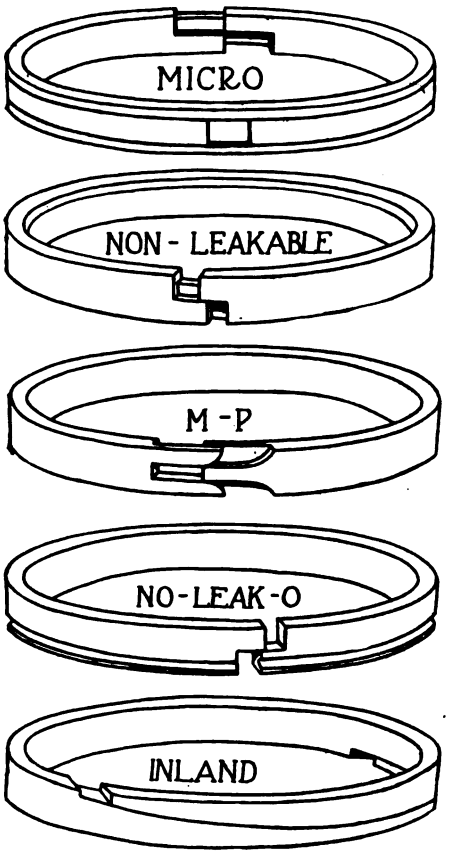


Crone primer



Spray primer

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the rings adjust themselves to oversize or worn cylinders within reasonable limit. Little or no fitting is required. Price, up to 4-in., $1; up to 5-in., $1.25. —Gill Mfg. Co., Chicago.

Pressure-Proof

This is a compound ring consisting of three parts, an outer part which comes in contact with the cylinder wall, a smaller ring which closes the gap in the other and an expander which serves to maintain the contact of the ring equally all around the cylinder. It is said the ring adjusts itself automatically to the ring groove.—Price, $1.08, 2½ to 3 in.; $1.13, 3⅛; $1.17, 3¼; $1.22, 3⅜, up to $2.16 for 6 in.—Pressure Proof Piston Ring Co., Boston.

Sealtite

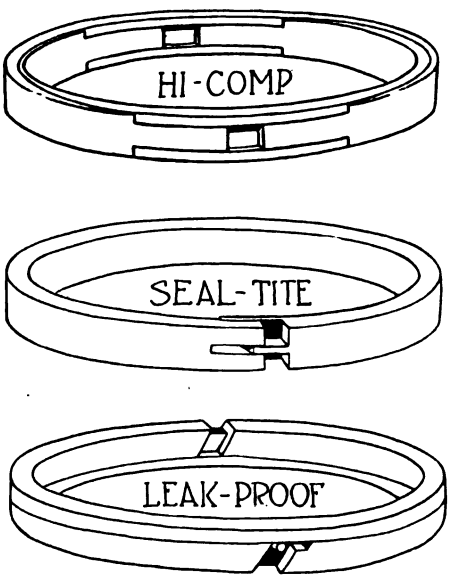
This is a one-piece concentric ring in which a butt joint is sealed by a groove and tenon arrangement. They are made in all regular as well as over sizes. The material is fine grained, gray iron. Prices are 2½ to 3⅞ in., 75 cents; 4 to 4⅞ in., $1; 5 to 5⅞, $1.25; 6 to 6⅞ in., $1.50; 7 to 7⅛, $1.75.—Sealtite Piston Ring Co., Minneapolis.

Vapor-Tight

This is a two-piece concentric ring with joints diametrically opposite and therefore sealed. The outer ring has a step joint and the inner ring has a joint split on a radius so that the two lips will fit each other regardless of where. Only the outer ring comes in contact with the cylinder. All sizes are made, prices varying from $1 for 2 7/16 to 4 in. to $2.50 for 7 in. size.—Baker Valve Co., Minneapolis.

Victor

This is a two-piece concentric ring with butt joints diametrically opposite and therefore sealed. Each section is concentric with tapering sides to provide for even expansion. The heavy portion of one section is opposite that of the other section also tending to equalize pressure. The expansion slot in each section is protected by the heavy portion of the other. Rings are made of individual castings with the original scale left on the inside to give resiliency.



Prices are $1 and $1.25 according to size. —A. E. White Machine Works, Eau Claire, Wis.

Inland

The Inland is a one-piece concentric ring with a spiral cut to allow for expansion and provide equal pressure around the circumference of the ring. All sizes are made from 2½ to 7½ in. diameter, the prices being $1 to $1.50 each.—Inland Machine Works, St. Louis.

M-P

This is a one-piece concentric ring made of selected gray iron and having a combination lap and groove and tenon joint. Prices are $1 to $1.50, the latter applying to the 5½ in. size.—Metal Products Co., St. Louis.

Chopa

The Chopa is a compound gray iron ring composed of a number of overlapping sections. Because of the compound construction, an even pressure is exerted on the cylinder walls. It is stated the ring will accommodate itself to turn to worn or scored cylinders within reason. —Chopa Piston Ring Co., Detroit.

No-Leak-O

This is a one-piece concentric ring with a step joint and an oil sealing groove machined around its circumference. The purpose of the groove is to build a small quantity of lubricating oil and effectually seal the base between ring and cylinder. Prices vary from 80 cents to $1.30 according to size.—Automobile Accessories Co., Baltimore.

Tenion

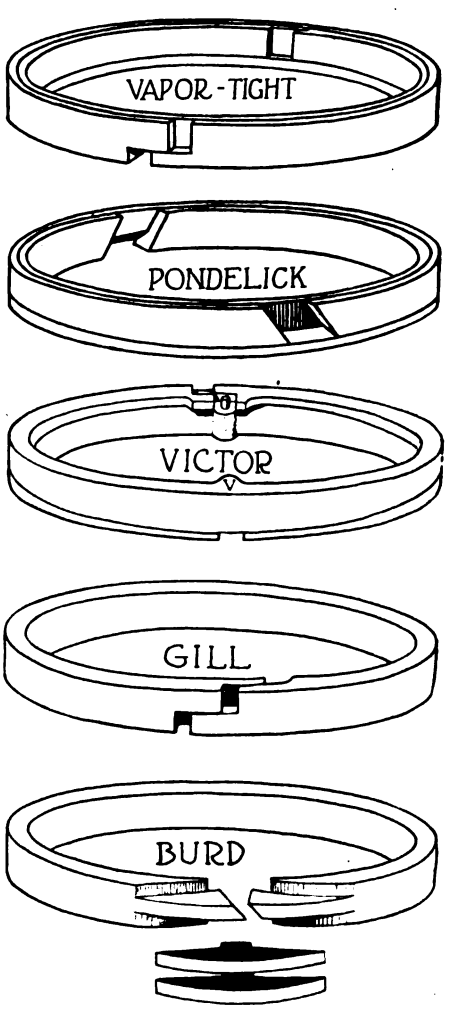
The Tenion is a gapless concentric ring. The upper section, which is presented to the pressure of explosion and expansion, is an inverted L shape. The lower section is rectangular and interlocks with the upper section. The joint in the upper section is sealed by the lower section and vice versa. The circumferential joints are on the lower and outer surfaces where they collect oil, thus being properly lubricated; the oil also operates as an effectual seal. Prices are $1.60 for 2¾ to 4½ in. size; $1.75 for 4⅝ to 4⅞ in. and $2 for 5 to 5½ in. —Edward A. Cassidy Co., Madison Ave. and 40th St., New York.

Wasson

The Wasson ring is a one-piece concentric ring with an ordinary joint. The inner surface of the ring is peened by a special process which results in equal expansion at all points in the circumference. The ring is made from pot castings of gray iron, machined and ground. —Lake Sales Co., 1947 Broadway, New York.

V-Plex

This is a compound concentric ring in which a V section ring fits into a V groove in another section. Ordinary joints are sealed by the V section and in



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Here are three different styles of Strook motorobes

case of wear this V section merely fits more tightly into the V groove. Prices up to 2½ in., $1; 2½ to 3¾, $1.25; 3 3/16 to 4½, $1.50; 4 9/16 to 5½, $1.75; 5 9/16 to 6½, $2.—Tri-Plex Sales Co., Chicago.

Sta-Tite

This is a three-piece compound concentric ring consisting of three units—a bull ring and two outer rings, pinned relatively to each other so that no opening is left. Slots are set on thirds and the circumferential pressure is the same at all points. They are in all sizes and widths. Price $1, 2½ to 4 in.; $1.25, 4⅛ to 5 in.—Piston Ring Co., Muskegon, Mich.

A. C. Non-Leakable

This concentric ring consists of two elements, an outer and an inner ring. The outer element is L shaped and the inner element is square. Only one section of the ring presses against the cylinder wall. Prices, $1, 2⅝ to 4⅞ in.; $1.25, 5 to 6 in.—A. C. Non-Leakable Piston Ring Co., Compton, Ill.

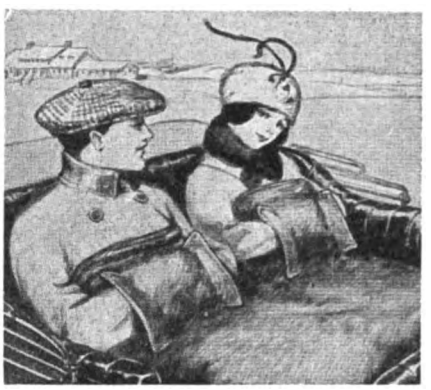
Pondelick

This is a two-piece concentric ring with taper seated self-adjusting and corrugated interlocking surfaces. Rings are made in all sizes; price, $1, 2½ to 3 7/16 in.; $1.25, 3½ to 4½ in.; $1.50, 4 9/16 to 5½ in.; $1.75, 5 9/16 to 6 in.—Pondelick Piston Ring Co., Chicago.

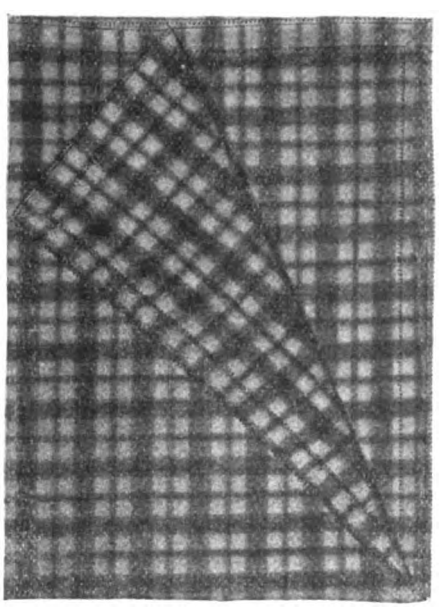
Robes

Chase

Chase robes are made in a great variety of designs and colors. Plush robes are made in single and double thicknesses with or without rubber lining. The Chase muff robe is one of the latest innovations and consists of the usual robe with two or three muffs built into it. Prices vary with the quality and size of the robe. Chase Protector robes fit closely to the dash and sides of the car and around the driver. For Ford cars they sell for $2.45 in fine grain rubber face with gray wool lining, up to $6 for a beaver face robe with plush lining. The same style of robe to fit nearly any car with 36-in. dash and left drive, including Metz, Chevrolet, Maxwell, Dodge, Overland, Buick, Paige, Saxon, Reo, Cole, Winton, Dort, etc., costs $2.80 for the cheapest quality up to $8 for a double plush robe. The company also makes heavy gray wool mats to fit the front compartment of a Ford and close all openings at $1.07 each. Plain rubber protector robes with shepherd plaid back are $1.85 for 72-in. and $2.20 for 84-in., with heavy rubber face and green or black plush lined, the price is $4.75 and $5.50 respectively. An extensive line of radiator and hood covers also is made, prices varying from $1.90 for a combination hood and radiator cover for a small car to $6.60 for a more luxurious radiator and hood cover for a larger car. —L. C. Chase & Co., Boston.



Robertson Muff Robe



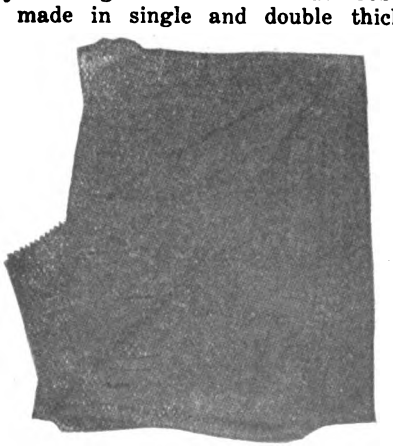
Burlington Plaid Robe

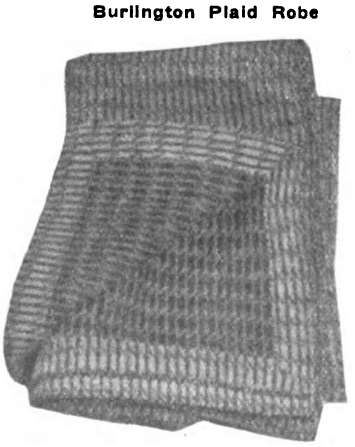
Perfection Fur Rug

These rugs may be made to fit either the front or rear compartments and are made of black Alaska cub bear fur with heavy interlining of windproof material. Each is made to fit a particular car. Price $1 per sq. ft.—Perfection Fur Robe Co., Chicago.

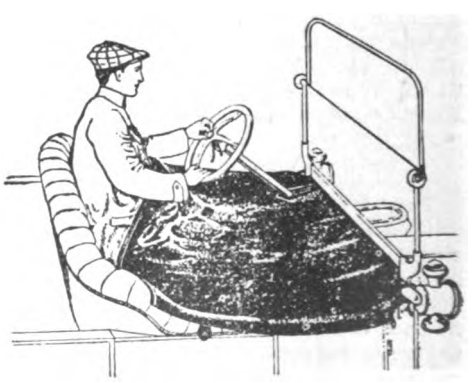
Sho-Fur Robes

There is a special robe made for commercial vehicle service which is very





Two styles of Wisconsin Robe for everyday use



Chase Protector robe

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substantial in construction. Price is $8.50. In addition, there is a complete line of robes ranging in price from $6 to $15.—Burlington Blanket Co., Burlington, Wis.

Oakland Robe Lock

The Oakland robe lock is a large clamp which fits around both robe and robe rail and is locked so that the robe cannot be removed. It is made of phosphor bronze, nickel plated and has a tumbler lock. Any thickness of material can be locked. Price, $2.50.—Robe Lock Co., Oakland, Cal.

5A Robes

These are made in great variety of styles and materials varying from simple fringed robes of wool to more elaborate ones in a great variety of patterns. Mackinaw robes are made to fit around the sides of the car and enclose driver or passengers. There is also a line of plain plush robes in solid colors, both lined and interlined with waterproof material. There is also a muff robe which may have two or three muffs built into place. —William Ayres & Sons, Philadelphia.

Premier Robes

Premier robes are all one size, 50 x 72, and in various materials and colors, unlined, as follows: Brown whipcord, $3; gray corduroy, $3.50; brown diagonal striped wool, $3.50; bedford cravenette in brown, gray, gray mixture and light drab, $3.75; drab mackintosh, $3.50; olive jean, $3.75; rubber drill, $2.46; rubber cloth, $3.10. Following are lined robes: Rubber drill, felt interlined, checked back, $3.75; rubber cloth, felt interlined, checked back, $4.75; rubber cloth, cloth lined, $5.75; Leatherub, cloth lined, $6.75.—Premier Auto Novelty Mfg. Co., New York.

Frunt-Seet Robe

This robe is for the driver's compartment and is made to fit all cars, including the new model Ford. It is black or green plush with heavy cloth lining and reversible to fit either right or left hand drive cars. Price, $6.50. To fit 1913 and 1914 Ford, black or green plush with heavy cloth lining, $5.—Automobile Apparel Co., Port Chester, N. Y.

Wisconsin

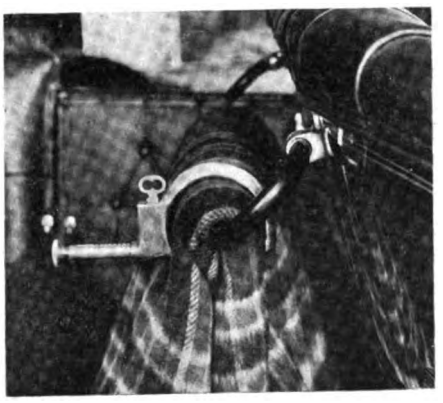
A popular type of Wisconsin robe is No. 700, which has a 2-in. lay all around two rows of stitching with pinked edges. The robe is water repellent and soft. Prices are $4 up.—Wisconsin Garment Co., Burlington.

Robertson

A number of different styles of wool and plush robes are made. A popular style is a plush muff robe with muffs built into the robe. No. 145, which is double plush, green outside and black inside with two plush muffs, 54 x 72 in., is $24.—Robertson Auto Robe Co., Minneapolis.

Stroock

Stroock motor robes are a high class product made for a high class trade.



Oakland Robe Lock

They are full standard size, two passenger, 50 x 60; three passenger, 54 x 72, and some 60 x 72, and extra large size, 54 x 84 and 60 x 84. The robes are made of springy fabric, flexible, soft and strong, and are easily cleaned. The robes are of plush construction so that the wear comes on the end of the fiber and not on the body of the robe. Styles with muffs built in them also are made. Following is a partial list of styles: "Superior," solid color, double plush; "Supreme," solid color, double plush; "Seneca," wavy mohair plush face, plain black plush back; "Progress," heavy double plush; "National," soft mohair plush for limousines; "Princess," high grade crushed plush face with wavy mohair plush back; "New York," a robe for city usage; "Siberia," undyed sealskin effect on plush and rubber interlined.—S. Stroock & Co., New York.

Name-On

These robes differ from all others in that the name of the owner is woven into the fabric and cannot be obliterated without destroying the robe. They are made in a variety of different color combinations as follows: Black, maroon, fawn, green, gray, dark blue, tan and white, all the colors being fast. Price, 54 x 72 in., $12.50; 54 x 84 in., $15. The name on any robe is limited to 20 letters. —J. & E. Dawson, Philadelphia.

Anti-Freeze

Johnson's Freeze-Proof

This is a non-evaporating compound mixed with the water in the cooling system to prevent freezing. One application is sufficient for a season. One package will protect a Ford radiator to 5 deg. below zero Fahr.; for larger cars two packages are required for this temperature. Three packages protect to 20 deg. below zero. The preparation will not corrode metal nor injure rubber. Packages containing 6½ lb. are $1.50—S. C. Johnson & Son, Racine, Wis.

Never Freeze

This is a harmless anti-freeze solution which is dissolved in water and put into the cooling system. It is quite different from other preparations and contains no acid or anything injurious to rubber or metal. It also acts as a cleanser. Contents of one package are sufficient to prevent a Ford radiator freezing at 15 deg. below zero Fahr. Price, $1.50 gal. —Hall-Thompson Co., Hartford, Conn.

Rie Nie

This is non-evaporating anti-freeze compound less expensive than alcohol. Plain water is added to allow for evaporation. The solution can be made in strengths to withstand any degree of cold. The preparation is harmless to rubber and metal. Price, $1.25 per gal.—Durkee-Atwood Co., Minneapolis, Minn.

Peerless

Peerless anti-freeze compound does not loose its strength and it is said that one filling lasts practically an entire season. Water is added to allow for evaporation. One-half Peerless solution and one-half water protects to 15 deg. below zero Fahr. It is sold in gallon cans and barrels. Price, 90 cents per gal. —Columbus Varnish Co., Columbus, Ohio.

Frezalene

This preparation contains neither alcohol nor glycerene, will not burn and is harmless to rubber or metal. It can be prepared in strengths to protect from freezing to 40 deg. below zero Fahr. The fluid is non-evaporating. Price, $1.50 per gal.—Frezalene Mfg. Co., Inc., Chicago, Ill.

Orez

This anti-freezing compound is shipped in crystal form in bags sufficient to make fifty gallons. It contains no acid and is harmless to metal and rubber. The price to the dealer will allow of the solution being sold at 50 cents per gal.—Orez Mfg. Co., West Middletown, Ohio.

Thermite

This is a non-evaporating compound mixed in certain proportions with the water in the cooling system to give protection to any desired degree of cold. One application is said to be sufficient for all winter and losses through evaporation are supplied by adding water. Complete directions are supplied telling the proper proportions for various sized radiators.—Northwestern Chemical Co., Marietta, Ohio.

Victor

The Victor heater is intended for Ford cars and warms the car by circulating fresh warm air. It operates on the same principle as a hot air furnace, circulating fresh air over a heated drum and sending it upward. The drum runs lengthwise at right angles to the exhaust pipe, the exhaust being turned into it. Fresh air circulates around the outside of the drum. The heater is installed by cutting a V notch in the exhaust pipe, attaching the special exhaust pipe going through the heater and installing the heater with the special floorboard ends supplied with it. Price $5.—Crew Levick Co., Philadelphia.

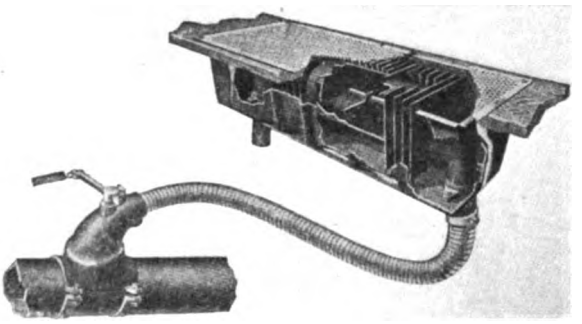
Utility

The Utility heater is operated by the heat from the exhaust and may be turned on or off or regulated by a valve. It costs nothing to operate, gives off no

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Left—Victor $5 heater for Fords. Right — Vesuvian heater which derives its heat from the exhaust



Car Heaters

odor, cannot burn and never requires attention. It consists of a 2½ in. tube connected by a flexible pipe to the exhaust from the engine and thoroughly protected with a perforated metal protector. There are no moving parts. It gives off its maximum heat in from 1 to 3 minutes.—Hill Pump Valve Co., Chicago.

K. P.

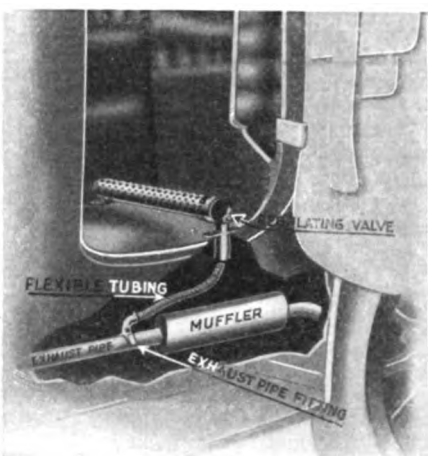
Two styles of foot rest heaters are made, both being operated by exhaust gas. One style is stationary and is highly nickel plated and sells for $15. The other style is arranged so that it may be swivelled out of the way, is made of brass, highly nickel plated and sells for $25. Both styles are connected to the exhaust with flexible metallic tubing. The heater is noiseless and warms the car with fresh air heated by the exhaust.—K. P. Mfg. Co., 250 West Fifty-fourth Street, New York.

Ottofy

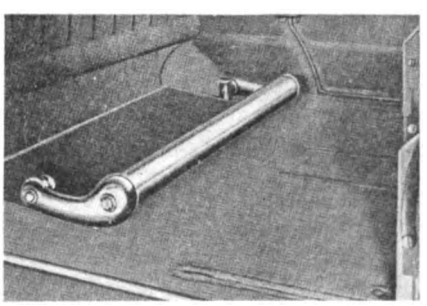
The Ottofy heater consists of a tube which fits around the exhaust manifold of the car and is open at the front end. Cool air passing in at the front is forced back by the action of a fan to radiators which may be placed in both front and rear compartments. The amount of heat may be regulated. Price, for Ford roadster, $7.50; touring cars, $10; other roadsters, $12; touring cars, $18.—Ottofy Auto Heater Co., St. Louis.

Clark

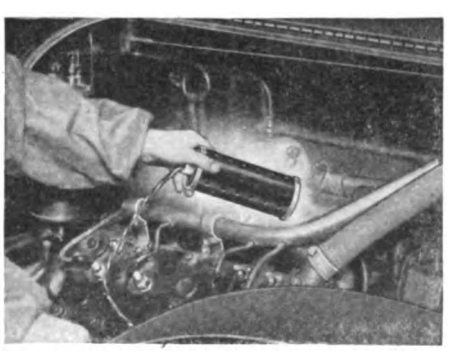
The Clark heater is a substantial metal box made in various sizes with a tray or drawer which carries a block of heating material which burns without odor or danger. Externally, the heaters are covered with Brussels carpets in various colors. No. 5B oval type, 12 in. long, $2; No. 7B with slanting top, 14 in. long, $2.50; 7X with slanting top covered with mohair plush, 14 in. long, $4.75; heating units are 75 cents a dozen and each unit burns from 12 to 16 hours.—Chicago Flexible Shaft Co., Chicago.



Utility exhaust heater



K-P footrest heater



Hughes electric heater

Vesuvian

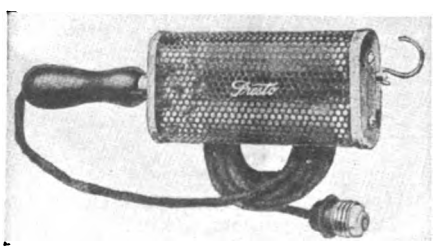
The Vesuvian heater is all steel with a seamless tubing core in which are welded a number of semi-circular baffle plates which, in addition to acting as a muffler, also assist in radiating the heat. Outside the tube are a series of fins which also act as radiators. The heater is connected to the exhaust pipe with a flexible tube, and there is a valve to regulate the degree of heat. Two styles are made, one setting flush and the other attached above the floor boards. Both types are $20. A special Ford type is $10.—The Reliable Auto Heater Co., Cleveland, O.

Cox Thermo

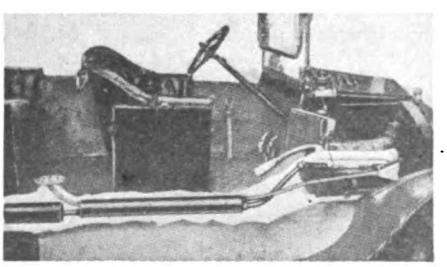
The Cox Thermo Autoheater has been considerably improved and an aluminum model added. The heaters are made in two sizes, 28 x 4 oblong, and 8 x 14 square. The heater fits on the floor of the car without sawing or cutting and gets its heat through a flexible tube from the exhaust pipe. The heat is controlled by a thermostat, avoiding the possibility of overheating. Two types are made, polished cast aluminum and cast iron black enamelled.—Cox Brass Mfg. Co., Albany.

Underhood Heater

This is a hot water heating system for motor cars, operating from an individual gasoline burner. This heater may be attached to any car, and takes the water from the base of the radiator, heats it, passes it through the water jacket, and, if desired, through a heating radiator in the passenger compartment, and then returns it to the radiator. It thus answers two purposes; first, to keep the engine and radiator at a temperature assuring easy starting and efficient operation in cold weather, and



Presto electric heater

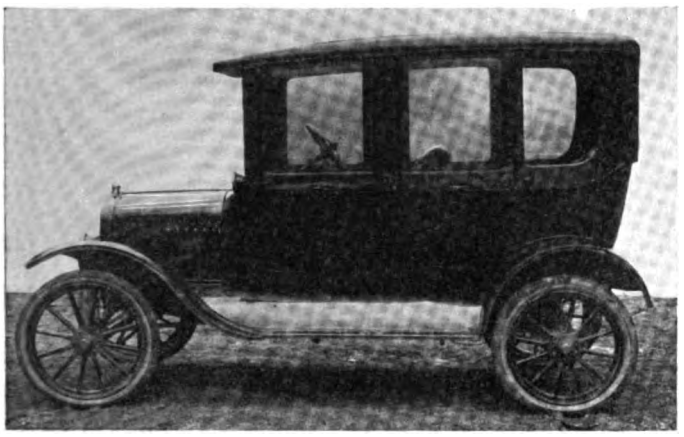


Ottofy exhaust heater

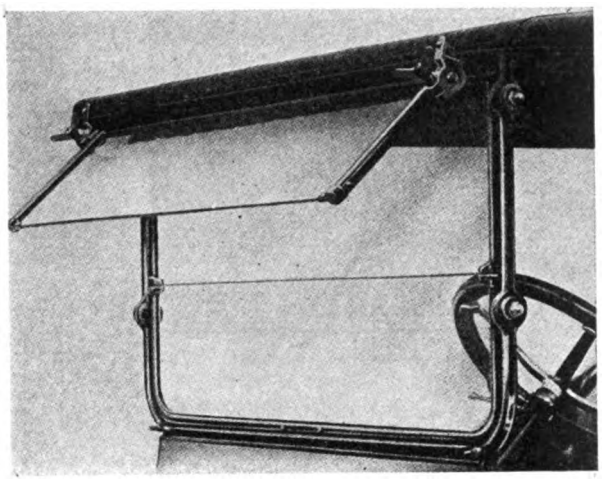


Clarke charcoal heater

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Detroit detachable winter top



Banker auxiliary windshield

secondly, to provide a means of heating the driving compartment.

The heating unit is attached to the side of the engine through brackets that are held in place by studs already on the engine. This unit comprises a special gasoline burner, placed beneath a heating coil, and both surrounded by a sheet metal shell that is insulated by an inner lining of asbestos.

Gasoline is fed by pressure feed from a separate steel tank, and the amount reaching the burner is controlled by a key operated needle valve. The burner is of the vaporizing type—that is, the gasoline is passed through a heated pipe, and is broken up into a hot vapor before being mixed with the air and burned. This assures a clean, steady flame of extreme heat and perfect combustion.

Both burner and heating coils are protected by a sheet metal container, at the side of which is mounted an air chamber or breather. The purpose of this chamber is to break up the incoming air currents; to supply the burner with the necessary amount of air, and to exclude the entrance of any foreign substances.

Two sizes of heaters are manufactured, depending upon the size of the car, and whether the interior of the car is to be heated.

The cost of the compartment radiator is extra, and depends upon the nature of the installation desired. The prices given above are for the heater completely installed and ready for use. —Underhood Motor Heater Co., Detroit.



Singer Traffic Signal

Detroit Top

These detachable weatherproof tops are made for all cars and in all styles such as coupe, sedan, etc. The material is strong and durable and the top is lined with limousine cloth. Doors are over size and are ingeniously made to slide upward and disappear into the roof of the car. They can be raised to any desired height for ventilation or traffic signaling. Side sections can be removed if desired leaving an open car without bolts or supports. Inasmuch as there is no glass rattles are eliminated. The top is fastened to the regular body irons of the car and is firmly fitted. Tops can be put on quite easily and are inexpensive.—Sharrer Patent Top Co., Fifty-fifth Street, New York.

Pasco Wire Wheels

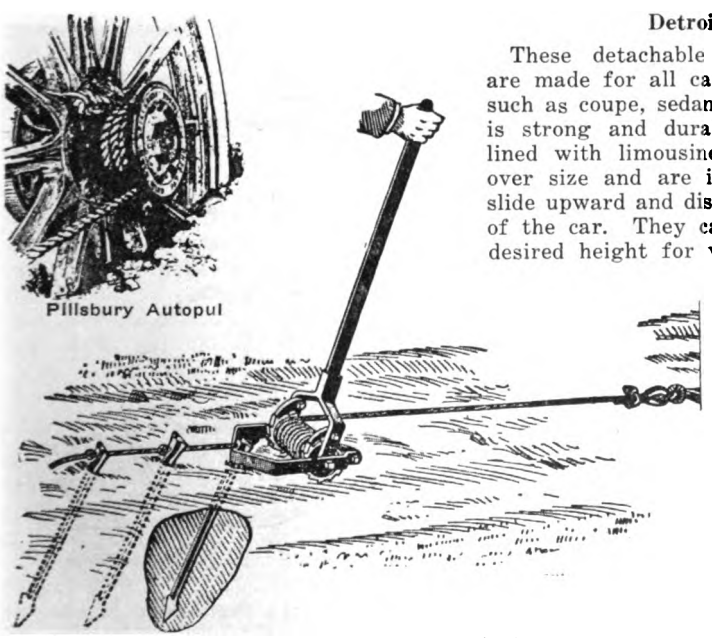
The new Pasco quick change wire wheel has four features: It has a four series rim punching and spoke lacing which increases the strength; all spokes cross four others; the hub cap is indestructible, the locking hub is positively locked and cannot work loose. Wheels for Fords will fit over the original hubs. A set includes 5 wheels all interchangeable, a dust cap for the spare wheel and all necessary bolts and tools. Price, for Ford, 30 x 3½, clincher rims, $75; 30 x 3½ or 32 x 3½, Q. D. clincher or Q. D. S. S., $100.—National Wire Wheel Works, Geneva, N. Y.

Keepers Puller

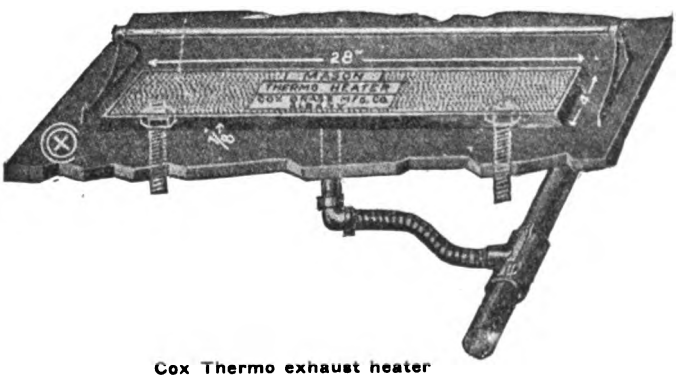
This is a mechanical puller for extricating mired cars, pulling them out of ditches, etc. It weighs 28 lbs. and provides a compound leverage said to give the power of about 4 horses. It is equipped with 12 ft. of cable and the necessary stakes for an anchorage.—J. C. Keepers, Olathe, Kan.

Gray & Davis Ammeters

With lamps being used more in the winter months an ammeter is a necessity. Gray & Davis instruments are

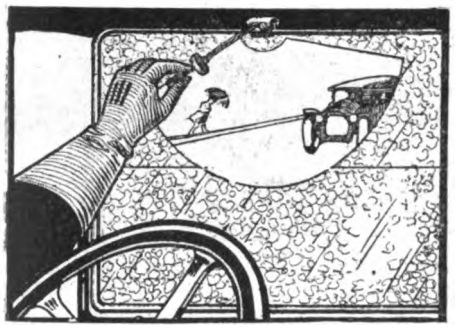


Keepers winch for extricating mired cars



Cox Thermo exhaust heater

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Outlook windshield cleaner

made in flush and surface types and indicate the rate of charge and discharge. They are of the moving coil type, indicating to 25 amps. on both sides of the scale. Flush type, 3-in., $4.50; flush type, 2⅝-in., $4.50; surface type, 3-in., $4.50. —Gray & Davis, Inc., Boston.

Johnston Windows

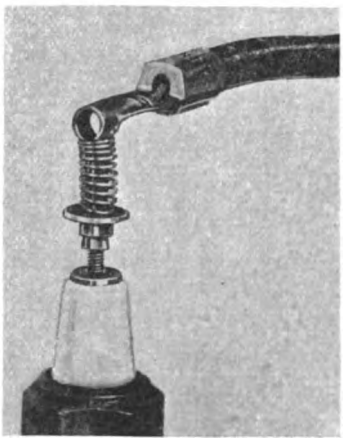
These windows are made of bevelled plate glass, round, oval, diamond shape, etc., and are intended to be inserted in flexible curtains. They eliminate the difficulty which comes from cracked or scratched celluloid, and are very easily applied. Prices for ovals are: 12 x 6, $4.50; 16 x 8, $6; 20 x 10, $8; round, 4-in., $2; 6-in., $2.50; 8-in., $3.50; 10-in., $10.—William R. Johnston Mfg. Co., Chicago.

Pillsbury Auto-Pul

This is a towing device by which a car will pull itself out of mud or sand, etc. It consists of two specially constructed winding drums or reels made in sizes to fit all hubs. The winding drums are bolted to the hubs and the driving wheels wind up the rope which pulls the car out of mud or sand. Price, complete set, automobile size, $8; truck size $8 to $35.—Pillsbury Mfg. Co., Minneapolis.

Rose Puller

This is a hand-operated device providing compound leverage for pulling the car out of sand and mud. The drum is large enough to hold 70 ft. of ⅜-in. cable and the complete equipment weighs 27 lbs. Price, with steel cable, $15; without cable, $12.50.—Rose Bros., Rosemont, Neb.



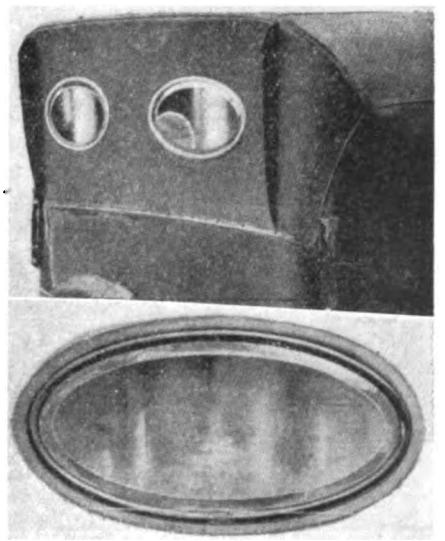
Handy Wire Terminal



Gray & Davis Ammeter

Pull-U-Out

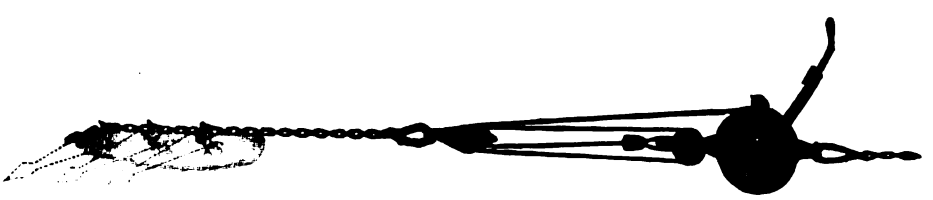
This is a mechanical device which multiplies man power 73 times. It will operate in any position and consists of a substantial winding drum, a lever ratchet crank, a steel cable, a pulley, two 7-ft. chains and three stakes. The stakes are used as a "hitching post." The complete equipment weighs 28 lbs. and when not in use folds into small space. In addition to being useful for towing cars out of mud and sand it may also be used as a hoist in the shop or garage. Price, No. 1, $15; larger sizes are $27.50, $32.50, $37.50, $60, $75 and $100.—Pull-U-Out Sales Co., St. Louis.



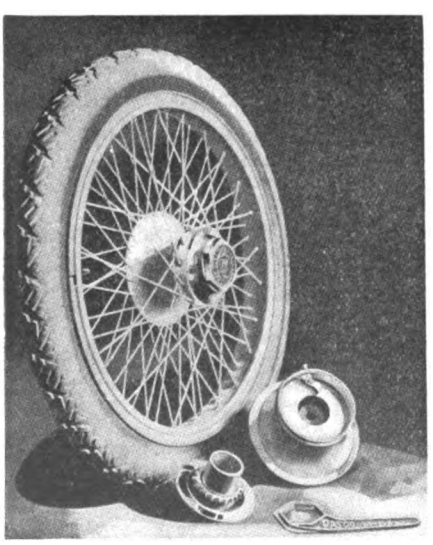
Johnston Top Windows

Handy Terminal

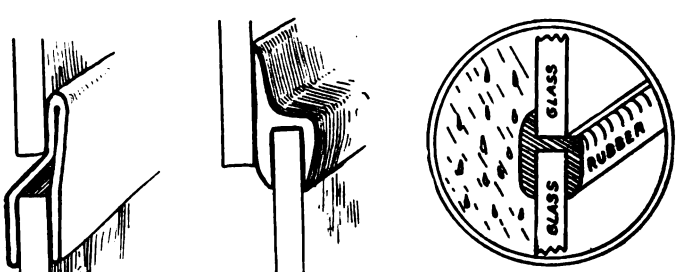
The Handy terminal cannot work loose. The jaws of the terminal are threaded on the inside and grip the threads of the spark plug center bolt. One motion releases the terminal or fastens it securely in place. The cable is attached with a copper clip, making a soldered joint unnecessary. It is made in three sizes to fit all plugs. Price 25 cents.—Francis-Rand Co., Cleveland.



Pull-U-Out hand winch for pulling cars out of mud and sand

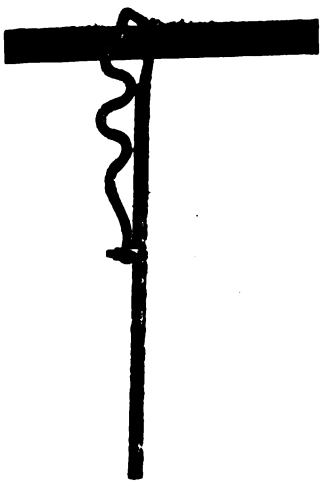


Pasco Detachable Wire Wheel



Three types of windshield strip—Akron transparent, Continental and Barker

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See-Safe windshield cleaner

Raintite

This is a properly formed rubber strip to close the gap between the upper and lower parts of the windshield and keep out wind and rain. It is easily and quickly adjusted to any windshield. Price 75 cents. There is a special strip to fit Ford shields which have overlapping glass.—Banker Windshield Co., Pittsburgh.

Banker Windshield Visor

This is a sort of supplementary windshield which attaches to the car top and is adjustable to keep rain and snow off the windshield fitted to the car. It is finished in black enameled steel and is shipped complete with all necessary fittings. Price $12.50 to $14, according to size.—Banker Windshield Co., Pittsburgh.

Akron Windshield Strip

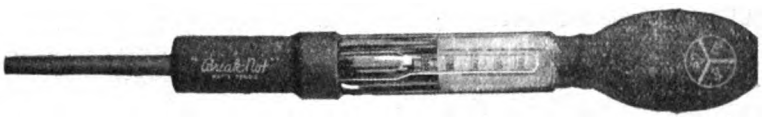
This is a transparent strip to close the gap between upper and lower portions of windshield. Being transparent it does not obstruct the vision of the driver and with ordinary care is practically indestructible.—Akron Auto Garage Co., Akron, O.

Maxotires

These are patented devices which fit inside of tires, thus prolonging their usefulness. It is said tires may be run until all the rubber is worn off and that the Maxotires make the tires puncture and blow-out proof. All sizes are made.—K. & W. Rubber Co., Ashland, O.

Auto Therm

This is a device which indicates the temperature of the water in the cooling system though a principle quite different from that of the thermometer is employed. The device consists of a central tube containing a generous column of colored fluid. On each side of the tube are colored panels, one a pinkish red and the other a purple. When the water in the cooling system is at the proper temperature, the color of the fluid is the same as the pink panel; should it become too hot, however, the fluid becomes the color of the purple panel. Two sizes are made. Standard for large cars, $3.50, and Junior for small cars, $2.50.



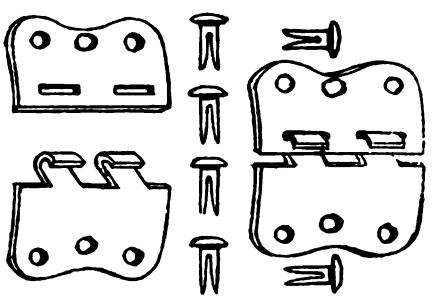
Break-Not storage battery hydrometer syringe

Freezometer

This instrument is intended to indicate the condition of anti-freeze solutions in the cooling system. It is similar to an acid hydrometer. It is graduated from 30 deg. above to 50 deg. below zero Fahr. Price 50 cents.—E. Edelmann & Co., Chicago.

Neptune Windshield Cap

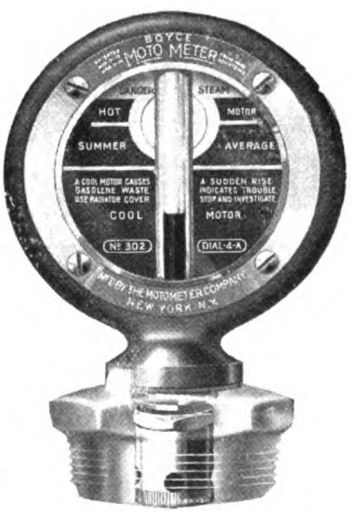
This attaches to the Ford top and closes the gap between it and the top of the windshield, cutting out drafts. The cap does not interfere with raising or lowering the top or attaching the side curtains. Two sizes are made, for runabouts and touring models. Price $2.—Clinton Ladow, Asbury Park, N. J.



Lakewood belt fastener

Singer Traffic Signal

Some sort of a traffic signal is essential for the driver of a closed car and the Singer has been perfected for this purpose. It consists of a small dial located conveniently to the driver's fingers and an electrically operated signal at the rear or front, or both, of the car. The control button operates a signal which may indicate stop, back, ahead, left and right. The device automatically indicates stop when the brake is applied. The signal is not difficult to attach. Price $25.—Singer Auto Traffic Signal Co., St. Louis, Mo.



Standard size Motor-meter

Lakewood Belt Fasteners

Any kind of belts, fabric or leather may be fastened with these. They consist of two metal portions which are riveted to the ends of the belt, one portion having a slot in it and the other portion having hooks which fit into the slots. The fastener is flexible, easily attached and may be opened and closed an indefinite number of times. Price $14.40 per doz. cards. of 2 doz. fasteners.—Lakewood Fabric Belting & Mfg. Co., Lakewood, O.

Boyce Moto-Meter

The use of a Boyce Moto-Meter is essential to the intelligent use of a radiator and hood cover. This is a thermometer which indicates the temperature of the water in the cooling system and is attached to the radiator cap. Several styles are made, varying in price as follows: $2.50 for the Midget instrument to $5 for the Junior model and $10 for the Standard model. Various initial and car name dials are supplied free.—Moto-Meter Co., Inc., Long Island City.

Continental Windshield Strip

This windshield strip is made of rubber in 42-in. lengths packed 15 to a box. It can be furnished in any lengths up to 10 ft., on special order. A special type is made for the Ford car in 37-in. lengths, packed 12 to a box.—Continental Rubber Works, Erie, Pa.

See-Safe

This is one of the simplest windshield cleaners on the market and is attached quickly and easily without drilling or tools. It is merely slipped over the top of the windshield and holds itself in place. Price 50 cents.—Stadeker Metal Specialty Co., Chicago.

Outlook Windshield Cleaner

The Outlook is made in two types, one attaching to the windshield frame and the other being attached through the glass. On the side opposite to the squeegee strip there is a rubber roller which keeps the squeegee tightly in contact with the glass and permits it to be moved easily. Incidentally, it holds it tightly against rattle. Price, either type, $1.50.—The Outlook Co., Cleveland.

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J. T. Windshield Cleaner

These are made in three types, attached through the glass, attached through the frame and clamped to the frame. They consist of the usual squeegee held in contact with the glass and moved by an arm on the driver's side of the windshield. Attachment takes about 15 min. Types attached through the glass and through the frame are $2, the other one being $1.50.—"J. T." Auto Devices, Cleveland.

Mixture Heaters

Line

This electric heater clamps around the bowl of the carbureter and is connected to the current source on the car. It draws 5 amps. It can be installed in a few moments and will fit practically any carbureter. Price $3.—Mechanical Utilities Corp., Chicago.

Suburban

This heater is attached to the house current of 110 volts and placed under the engine hood, close to the carbureter. The current consumption is 100 watts. Price $3.50.—Suburban Lighting Co., Toledo.

Hughes

The Hughes heater is an electric device connected to the house current at any lamp socket. It will operate on all ordinary voltages and consumes about 100 amps. It is placed beneath the engine hood and provides sufficient heat to prevent freezing and insures easy starting. —Hughes Electric Heating Co., Chicago.

Thompson

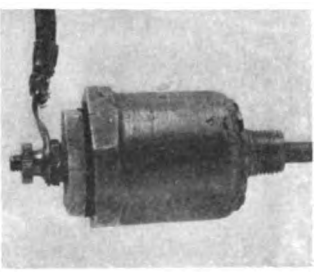
This is a small plug which is screwed into a threaded hole in the carbureter bowl. It may be connected to the source of current on the car and warms the gasoline, insuring quick vaporization and easy starting. Price $4.50—Thompson Mfg. Co., Des Moines.

Presto

The Presto heater is for use with house current, 110 volts, direct or alternating. It consumes about 100 amps. and is sold complete with 10 ft. of cord and an attachment plug. Price $4.—Metal Specialties Mfg. Co., Chicago.

Hiatt

This is a manifold fitted to take the place of the regular manifold on the Ford. It has a hollow pipe inside the body through which air from the outside combined with water vapor from the radiator is passed and superheated by the heat from the exhaust. This mixture is then passed to the carbureter and thence to the cylinders. Price $15. —Hiatt Manifold Co., Indianapolis.



Sprague Mixture Heater

Crone

The Crone vaporizer is a sort of gasket with a plurality of small tubes which assist in perfecting the mixture by effectually pulverizing small particles of fuel and promoting a homogeneous mixture. Price, in all sizes, $5.—F. G. Crone, Buffalo, N. Y.

Thorwald

This is an electric device which is screwed into the bowl of the carbureter and connected to the ordinary source of current on the car. The heat assists in vaporing the fuel and results in easy starting. Price $5.—E. H. Sprague Mfg. Co., Omaha, Neb.

Lepper

This is a small electric furnace inserted in the intake pipe just above the carbureter. It is connected to the ordinary source of current on the car and provides a warm mixture for easy starting. The heating element uses a little more current than a pair of headlamps. A small electric lamp in series indicates when the heater is operating. It can be connected to a 6, 12, 18 or 24-volt circuit. The heater can be installed in one hour. Price $7.50.—Lepper Mfg. Co., Mason City, Iowa.

Spotlights

Red Spot

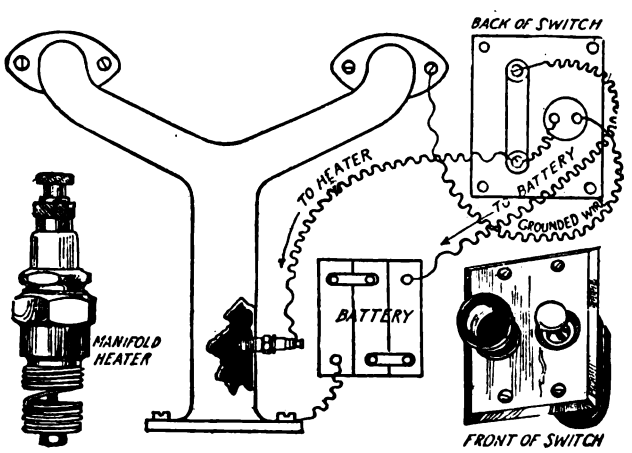
This spotlamp differs from others in that it has a partly transparent red cylinder surrounding the bulb in such a way as to eliminate glare and give a distinctive appearance. When desired, the entire beam of light may be made red as a danger signal. It is equipped with a rear view mirror and the bulb has a focusing arrangement. The bracket is a universal type. Price, without mirror, $6.50; with mirror, $7.—F. W. Wakefield Brass Co., Vermilion, O.

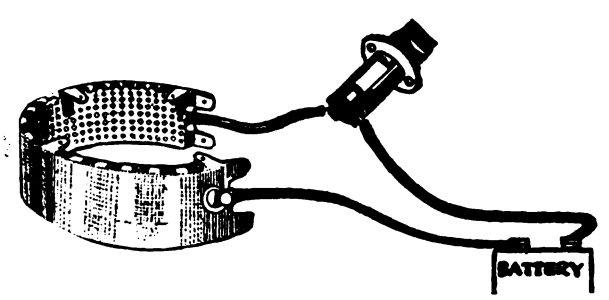
Indiana

The Indiana spotlight is 6½-in. in diameter and has a true parabolic silver-plated reflector. The switch is conveniently located and the bracket is a universal type. A diminishing mirror is built into the back. The lamp is finished in black japan with nickel trim.—Indiana Lamp Co., Connersville.

Old Sol

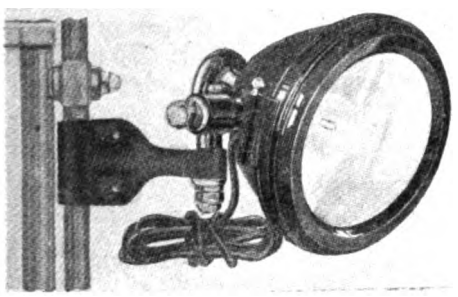
Nitrojector No. 100 is the latest addition to this line and is a very powerful spotlamp with a cylindrical double shutter over the bulb to eliminate glare. This consists of two aluminum tubes, one sliding inside the other so that by advancing one glare can be eliminated. The bulb is instantly focused by turning a knob on the handle. There is a 4-in. diminishing mirror which gives a rear view with the lamp pointed in the direction the car is going. The bracket is universal and unusually solid. The lamp comes equipped with 5 ft. of cable, nitrogen bulb and pilot bulb, switch and brackets. Price $10. Other Nitrojector windshield driving lights No. 77, $5, and No. 70, $7, have quick adjustable focusing device, mirrorscope, universal bracket and other necessary attachments.—Hawthorne Mfg. Co., Bridgeport, Conn.



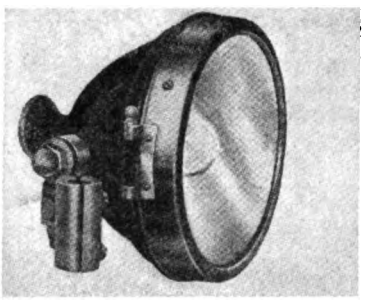


Left—Lepper electrically operated manifold heater to facilitate easy starting. Above—Mechanical Utilities Co. electric stove which fits around the carbureter bowl to assist in vaporing the fuel

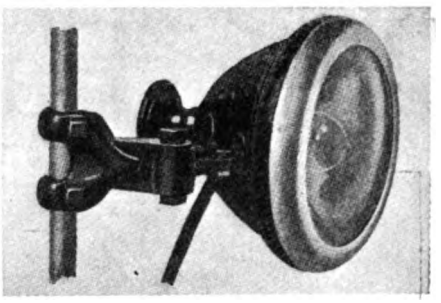
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Vesta



S & M



Indiana

Anderson

The Anderson spotlamp is attached with a universal bracket containing a reel on which the wiring is wound. The lamp can be detached quite easily and carried a considerable distance from the car to be used as an inspection lamp. The cord is rewound automatically when the lamp is returned to the bracket. The lamp and bracket are black enamel with a silvered parabolic reflector and a 3½-in. reducing mirror. Price, without mirror, $7.50; with mirror, $8.—Anderson Electric Specialty Co., Chicago.

Pittsburgh

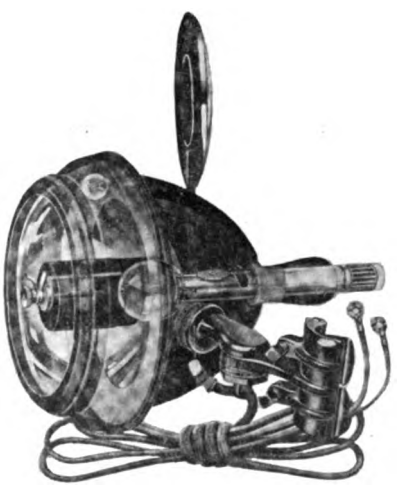
In the Pittsburgh parabolite there is a special type of reflector which is designed to concentrate all scattered beams and direct them in parallel lines without glare. Furthermore, this is said to eliminate the possibility of a dark spot in the center. The bracket is universal. The lamps is 7 in. in diameter with an auxiliary non-glare reflector, a Cutler-Hammer switch in the handle, a 4-in. diminishing mirror and a nitrogen bulb. Price $7.50. —Pittsburgh Electric Specialties Co., Pittsburgh.

S & M

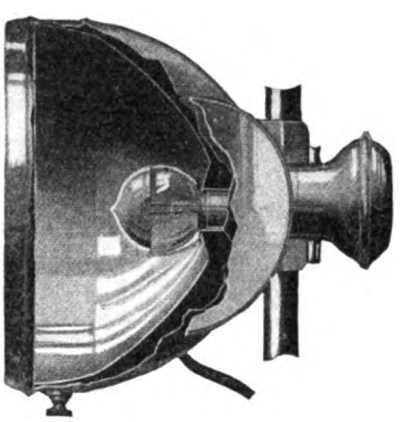
These are well finished spotlamps in a number of different sizes and styles, No. 1, 6½-in. diameter, $8; No. 2, special, 7½-in. diameter, $10.50. A rear view "periscope" increases the price of either $1. A special model is made for Fords and operates directly from the magneto. It is equipped with a 24 cp. nitrogen bulb and is 6½ in. in diameter. Without mirror, $7; with mirror, $8.—S & M Lamp Co., Los Angeles.

Howe

Two popular priced models have been added to the Howe line. These are No. 5, which sells for $5.50, and No. 15, which sells for $4. No. 5 is similar to model 8, which sells for $8, and is a double shell lamp with baked-on enamel finish 4-in. mirror, switch in the handle and spring controlled bracket. Clamps are furnished in styles to fit any windshield frame. The lamp is 6 in. in diameter. The Howe Jr. No. 15 is a single shell lamp with a convex lens, 4-in. mirror, switch in the handle and a similar bracket. A full line of other lamps also is made.—Howe Mfg. Co., Chicago.



Old Sol



Pittsburgh

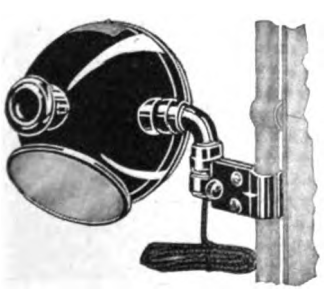
Vesta

A number of different styles of Vesta spotlamps are made for all purposes, both land and marine. Two popular styles are No. 193 and No. 197, the former being 7¼-in. diameter and selling for $8, and the latter, 6 in. in diameter and selling for $7. Both have 3-in. ground condensing mirrors and switch in the handle. Without mirror, the prices of both are $1 less. These lamps have a genuine Cutler-Hammer switch in the handle. Universal brackets are used. Prices have recently been reduced.—Vesta Accumulator Co., Chicago.

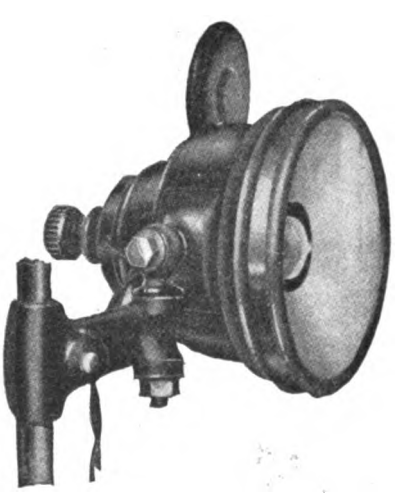
Victor

This is a moderate priced spotlamp, 7 in. in diameter and finished in black japan with nickel trimmings. It has a silver-plated reflector and the bulb is adjustable. The switch is in the handle. There is a 3-in. reducing mirror. Brackets are universal and will fit any windshield. Price $5.—Corcoran-Victor Co., Cincinnati.

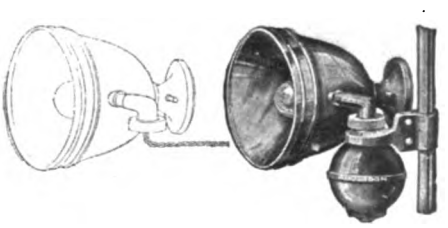
Don't Forget
Your
Liberty Bond



Howe



Red Spot

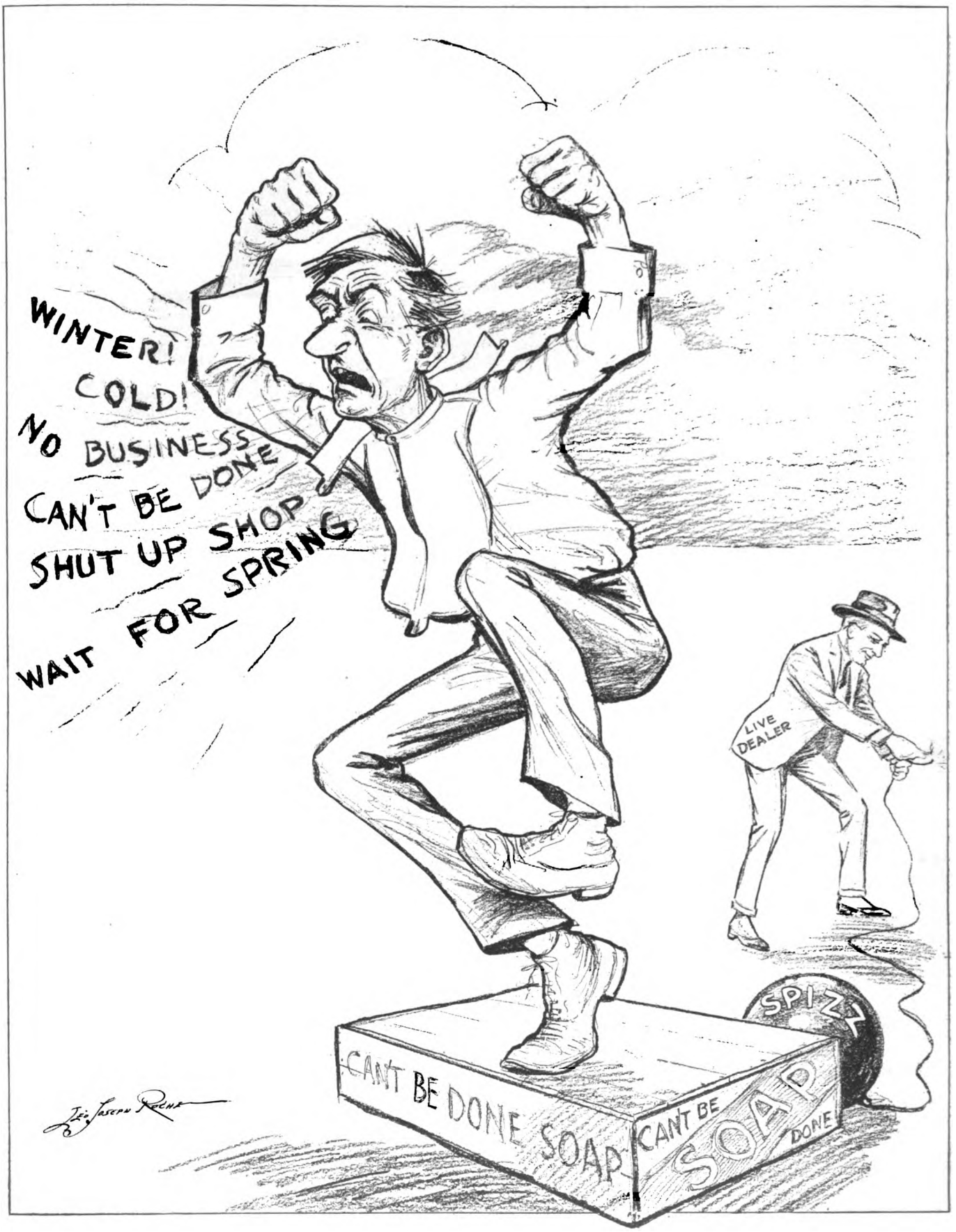


Anderson

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The Pacifist

These are fighting days. There is no place for the "Peace! Peace!" boy. Up and at 'em. You can make a lot of money this winter if you are an I-can-do-it man.



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How to

Speed Up Inspection Service

Better Mechanics No. 43

Eliminating Unnecessary Steps in the Most Common Part of Repairshop Work

By S. T. Williams

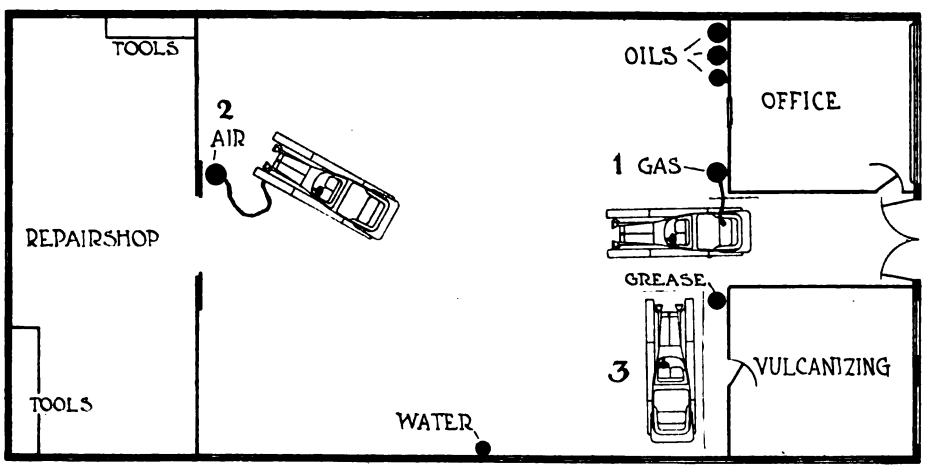


Fig. 1—When an owner wants his car "looked over," this is about the way it has to be shoved around just to get gasoline and air. It is then shoved into one of the stalls, where it is inspected

IF a stop watch record of the motions of the average mechanic were kept it would soon be seen that a larger part of his pay was given for walking than for doing the actual work. This time is spent in getting tools, in moving the car from one place to another, and in lost motion due to not analyzing the work to be done.

Inspection, lubrication, some minor adjustment, together with flushing the radiator, etc., comprise much of the work of the average shop. In Fig. 1 is shown the movements of a car in simply getting a supply of gasoline, having the tires inflated, and being placed in a stall preparatory to the inspection.

Fig. 2 shows the steps the workman has to—or usually does—take in doing the work, and Fig. 3 shows how, by bringing the tools and equipment necessary for the inspection work together in one place, most of these steps may be eliminated.

The Inspection Work

The following is the work usually done under the head of inspection. It comprises that work which the owner means when he says "Look the car over, oil it up, and see that the carbureter is right."

1—Gasoline.

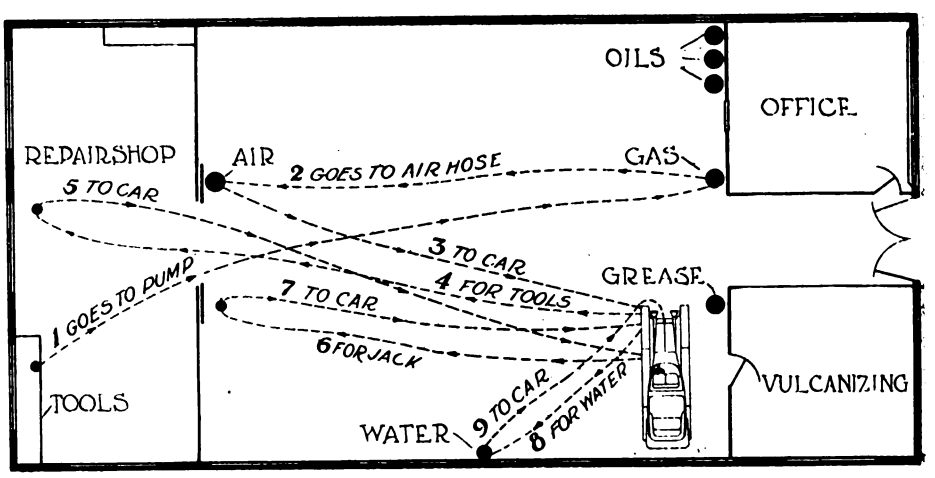
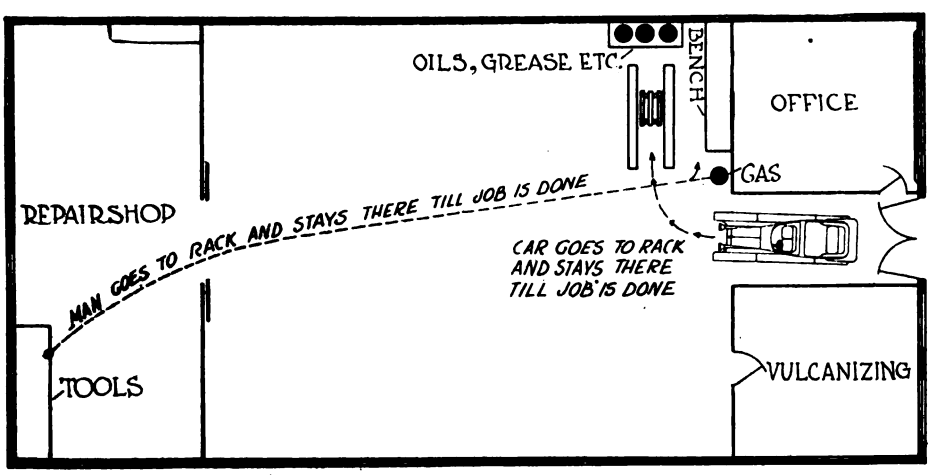


Fig. 2—In the average shop, the workman runs back and forth from shop to car, to oil can and back. The above is a map of a few of his trips in doing the inspection work



2—Air.

3—Oil—Drain and flush and the crankcase; wash out the clutch, etc.

4—Grease—Springs, all grease cups, wheels, rear axle, etc.

5—Flush radiator.

6—Tram the front wheels.

7—Minor adjustments (not repairs).

8—Carbon burning.

Fig. 3—Using the system described in the story, this is the map of the workman's travels, exclusive of the actual work done in inspecting the car

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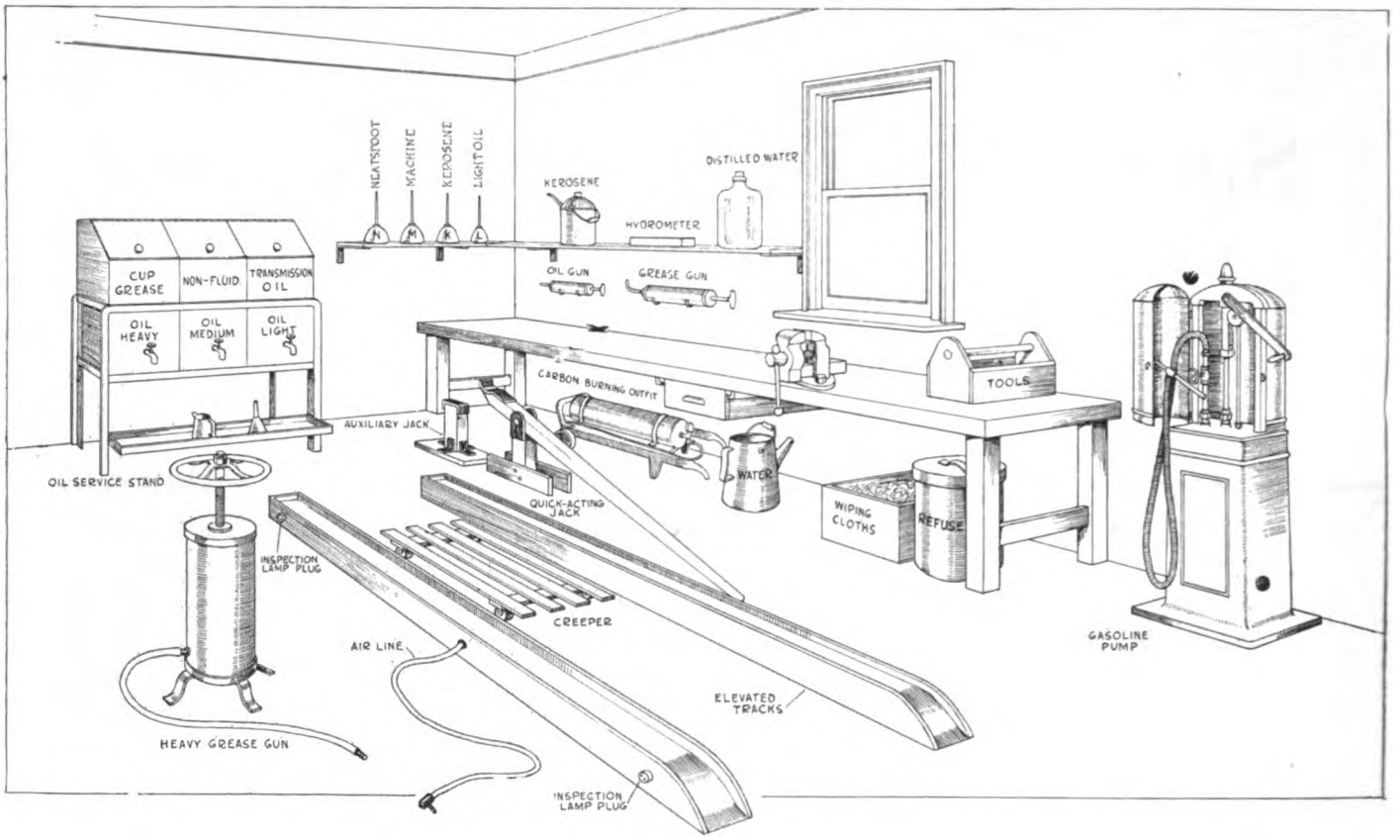


Fig. 4—This is the way the inspection corner should be laid out. Only the most important equipment is shown, and anything found necessary should immediately be added—and a special place provided for its accommodation

Equipment and Tools

PRACTICALLY all the equipment and tools required are already in every shop—or else can be easily made. They should be brought together in some corner that is easily accessible, and that has plenty of light. A complete layout of the equipment is shown in Fig. 4; and this layout will permit the workman to do the work in a most efficient manner.

A common work bench, fitted with a vise, is placed alongside the inspection stall. A shelf over this bench carries the supplies that are used in smaller quantities, and each has a place, and is returned to that place after use. The space beneath the bench is used for storage, and drawers provide still further room for special tools, etc.

The following tools should be provided for the portable tool box: Four open end wrenches, Nos. 34, 25, 29, 276; one monkey wrench; one spark plug wrench; one valve cap wrench; one screwdriver; one pair pliers; one putty knife; one spring opener; one hammer, and any other tools found necessary in the work. Whenever it is found that the workman has to go to the shop for a tool with any regularity, that tool should immediately be added to the equipment—as should all special tools found useful. And a space should be provided for each tool.

To permit all parts of the car to be reached with minimum exertion, the car should be raised on elevated tracks, as shown in Fig. 4. This track is about 15 ft. long, and 1 ft. high, with 1½ in. sideboards to hold the car in place. A creeper beneath the car allows the mechanic to slide easily from one part to another.

The sides of these tracks carry plugs for attachment of the inspection lights, and a compressed air outlet and hose renders tire inflation easy. The gasoline,

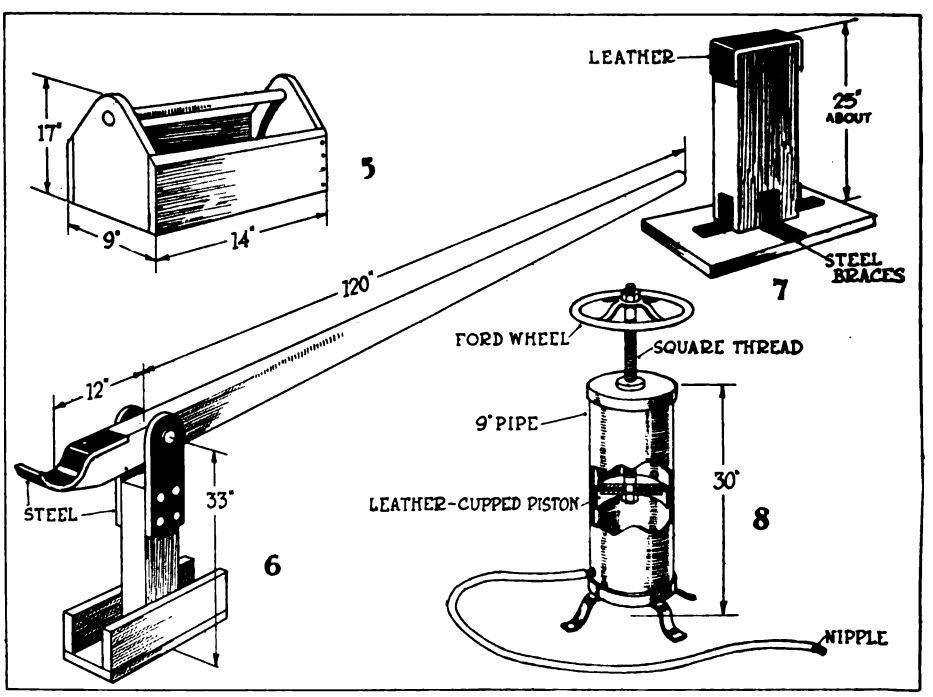


Fig. 5—A portable tool box of this construction permits the workman to have just the necessary tools on the job all of the time

Fig. 6—The wheels may be quickly raised by means of a quick acting jack—and just as quickly lowered

Fig. 7—Four auxiliary jacks should be provided to support the car after it is raised by the quick acting jack

Fig. 8—A large capacity, portable grease gun is used to force the lubricant into the gearbox, universal joints or rear axle. The one shown above may be constructed by the workman

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oil and grease supplies are placed near the rack, so they can be reached with minimum of motion.

As it is necessary to raise the wheels for adjustment and greasing, a quick acting jack, with several auxiliary jacks should be provided. The construction of these is shown in Figs. 6 and 7.

In addition to the several smaller grease and oil guns, a large capacity gun should be provided for filling gearboxes, rear axles and differential joints. There are several excellent guns of this type on the market, or the mechanic can make one as shown in Fig. 8.

In the same manner as the tools and equipment have been classified, should the various steps of each job be classified. For example, all parts requiring draining and washing with kerosene, such as the engine base and the clutch, should receive attention at the same time. The parts needing cup grease should next be cared for. The wheels should be adjusted, and trammed, and so on through the work. This not only assures all parts receiving attention, but eliminates unnecessary steps for tools or materials.

By taking one mechanic, placing him in charge of the inspection equipment, and training him to do the inspection work on an efficient basis, any shop can improve its service. Most of the work is not work that requires special ability or training; trained mechanics will be released for expert work, and only work requiring actual repair will be sent to the repairshop.

Two New McFarlan Bodies

ON this page are shown two views of distinctive bodies made under special orders by the McFarlan Motors Co., Connersville, Ind. This company specializes in out-of-the-ordinary body construction. One of these is known as the Model 124 Destroyer design, a four-passenger touring job, made for a Kentucky stock farm man, and the other a seven-passenger touring body equipped with an extended Victoria top, and built for a Los Angeles man.

The regular seven-passenger touring model has a number of pleasing features in addition to original design which gives a deep comfortable tonneau without appearing cumbersome. This model is equipped with cigar lighters, section lights, and thermo compartments.

In all, McFarlan comes in thirteen models, a two-passenger roadster, a four-passenger roadster, a four-passenger touring, a five-passenger touring, six-passenger and seven-passenger touring, a town-car, a seven-passenger cabriolet, two sedans, one with a sloping V front, and the other a straight front, a Berline, and limousine and a landaulet.

The regular McFarlan chassis known as the No. 90 to which both the open and closed bodies are fitted, is equipped with a 4½ x 6 Teetor-McFarlan six-cylinder engine rated at 90 horsepower. The carbureter is a McFarlan-Stromberg, two nozzle type, and fuel is taken through a vacuum feed system from a tank in the rear which holds 28 gal. Two separate systems of ignition—Westinghouse battery and high-tension magneto with separate plugs to each system—are installed in all models.

The clutch is a multiple dry disk and the rear axle Timken floating with spiral bevel gears. Rear springs are McFarlan cradle, 2½ x 64 in. Wire wheels are optional at additional cost. The starting system is Westinghouse with the starting switch on the steering column, and a separate Westinghouse generator is used for lighting.



Here are body designs to appeal to the most fastidious motorist. Above is a seven-passenger touring model and below is a special "Destroyer" design for four passengers

Don't Forget *Your* Liberty Bond

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How to
Save 40 Motions in the Shop

REPAIRSHOP SHORT-CUTS

From the Motor World Road Man

No. 1385—CASING ROLLER

SAVES 2 MOTIONS

When building up sections in an automobile casing, great pressure may be applied to the layers of the fabric by means of a special casing roller. This roller comprises two wooden rolls, one having a concave face and fitting onto the outside of the casing, the other having a rounded face and fitting into the inside of the casing. The outside roll is turned by a crank, and pressure is applied through a handwheel to the inner roll. By means of this device, inside patches, etc., may be pressed into place much quicker and better.

No. 1386—LABOR CHARGE CARD

SAVES 3 MOTIONS

In calculating the labor charge to be placed on the job card after the completion of the work, the foreman is constantly re-duplicating the same calculations. If the price of labor for all possible periods during the day be tabulated on a card and tacked up at the rear of the foreman's desk, a means is provided whereby the total labor charge will be seen at a glance. It is usually found sufficient to divide this card into ¼ hr. periods and take the amount nearest to the working time.—J. F. Walter, Buick Motor Car Co., Battle Creek, Mich.

No. 1387—DRILL PRESS WEDGE

SAVES 4 MOTIONS

An old file is usually used as a wedge to drive drills from position in the drill press head. A special device for this purpose permitting the drill to be readily removed comprises a wedge carried in a slotted handle so that a blow may be struck on the end of the wedge, quickly forcing the drill from place. A ring in the end of the handle permits the use of a chain to hold the wedge to the drill press.

No. 1388—JOB CARD BOARD

SAVES 6 MOTIONS

Each of the job cards of the individual workmen may be seen at a glance by the foreman if held on a board near the foreman's desk in the manner illustrated. By this the foreman can tell instantly how much work each workman has on hand and the status of the work. The daily time cards are also held on this board, and at the top the standing order numbers are printed to enable the men to charge the jobs to the proper order number.—J. F. Walter, Buick Motor Car Co., Battle Creek, Mich.

No. 1389—LOCATING KNOCKS

SAVES 3 MOTIONS

Perhaps the simplest device for magnifying engine noises comprises a length of drill rod, bent and soldered to the bottom of an old oil can. The opening of the oil can is pressed against the ear of the workman, and the end of the rod held against the engine casting. The drill rod transfers the noise, which is magnified by the oil can, the position of greatest noise being that nearest the knock.—Fred Teetor Garage and Machine Shop, Battle Creek, Mich.

No. 1390—CLAMP DOG

SAVES 4 MOTIONS

It is difficult to hold small pieces with an ordinary type of dog. For this purpose the work is facilitated by the use of a special clamp dog comprising two ¾-in. blocks bolted together and squared out to grasp the work between the mating faces. A short rod fastened to one of these pieces engages with the face plate, driving the work. This clamp has also been found useful in holding small pieces while work is being done on the sensitive drill, and is often used as a hand clamp.—Chas. Marquard, American Motors Co., Battle Creek, Mich.

No. 1391—VALVE GRINDER

SAVES 5 MOTIONS

Under the action of an excessively rich mixture, tungsten valves will warp, and ordinary methods of grinding or refacing will be found difficult. Replacement is expensive. A simple lathe grinding attachment may be constructed, driven through a leather friction wheel from the cone pulley or face plate, the grinding head being carried in the tool post of the lathe. Connection between the two is effected by a speedometer drive. A workman can reface a valve in ten minutes, whereas a new valve costs $1.75. —J. F. Walter, Buick Motor Car Co., Battle Creek, Mich.

No. 1392—MISCELLANEOUS PARTS STORAGE

SAVES 6 MOTIONS

If the workman must go to the stockroom every time he desires a lock washer or cotter pin, valuable time is lost and often the waste is increased, as the man takes more pieces than he requires to prevent another trip. By providing a small parts storage rack beneath the bench, permitting the storage of a working supply of cotter pins and lock washers, these parts are immediately available and unused parts may be readily returned. Each of the compartments should be labeled with the part it is to hold.—J. F. Walter, Buick Motor Car Co., Battle Creek, Mich.

No. 1393—DRILL PRESS VISE

SAVES 3 MOTIONS

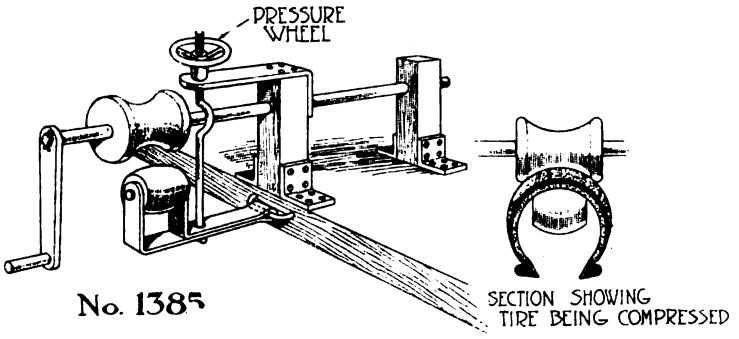
In holding small pieces of work on the drill press a machinist's vise bolted to the drill table is exceptionally advantageous. Irregular shaped pieces may be held without difficulty, and in addition to permitting the work to be done quicker practically removes the possibility of breaking the drill. The vise is held to the table by means of T-bolts and is removed when not in use.—S. Rathburn, American Motors Co., Battle Creek, Mich.

No. 1394—INSTRUCTION BOOK FILE

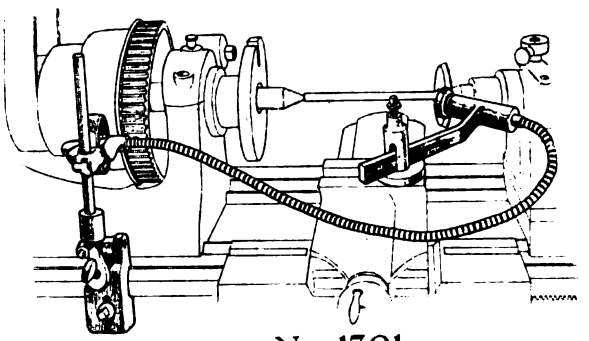
SAVES 4 MOTIONS

Instruction and parts books are usually kept unsystematically in the foreman's desk and time is lost in obtaining the desired book. By the use of a simple file as illustrated any desired book may be obtained in an instant. The file comprises a rack divided into a number of parts by means of wire partitions, and each compartment holds its own book. Parts books occupy one portion of the file and instruction books another, each being labeled to facilitate removal and replacement. This file is placed on top of the foreman's desk.—J. F. Walter, Buick Motor Car Co., Battle Creek, Mich.

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No. 1385

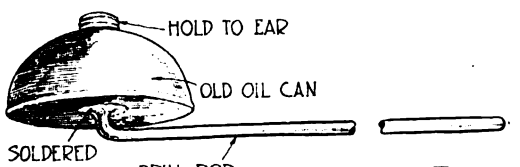


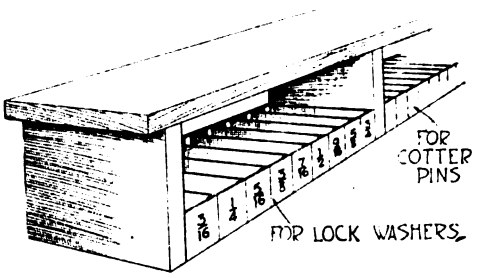
No. 1391

LABOR CHARGE CARD

HOURS	PRICE PER HOUR 75¢	80¢	85¢
¼	19	20	22
½	38	40	43
¾	56	60	64
1	75	80	85
1¼	94	1.00	1.07
1½	1.13	1.20	1.28
1¾	1.31	1.40	1.49
2	1.50	1.60	1.70
2¼	1.69	1.80	1.92
2½	1.88	2.00	2.13
2¾	2.06	2.20	2.34
3	2.25	2.40	2.55
3¼	2.44	2.60	2.77
3½	2.63	2.80	2.98
3¾	2.81	3.00	3.19
4	3.00	3.20	3.40
4¼	3.19	3.40	3.62
4½	3.38	3.60	3.83
4¾	3.56	3.80	4.04
5	3.75	4.00	4.25
5¼	3.94	4.20	4.47
5½	4.13	4.40	4.68
5¾	4.31	4.60	4.89
6	4.50	4.80	5.10
6¼	4.69	5.00	5.32
6½	4.88	5.20	5.53
6¾	5.06	5.40	5.74
7	5.25	5.60	5.95
7¼	5.44	5.80	6.17
7½	5.63	6.00	6.38
7¾	5.81	6.20	6.59
8	6.00	6.40	6.80
8¼	6.19	6.60	7.02
8½	6.38	6.80	7.23
8¾	6.56	7.00	7.44
9	6.75	7.20	7.65
9¼	6.94	7.40	7.87
9½	7.13	7.60	8.08
9¾	7.31	7.80	8.29
10	7.50	8.00	8.50

No. 1386

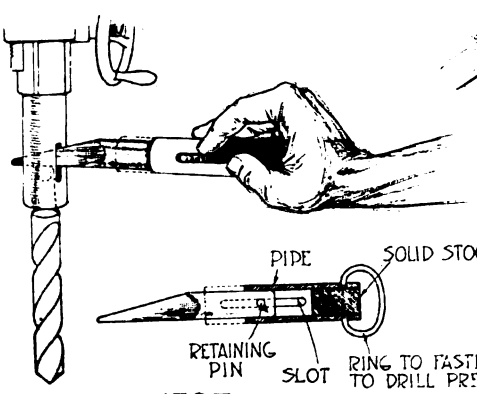




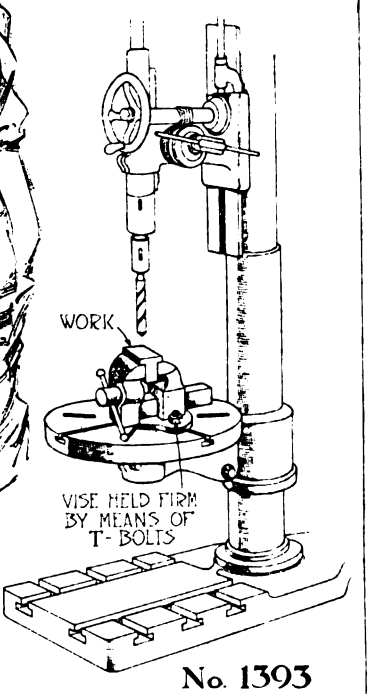
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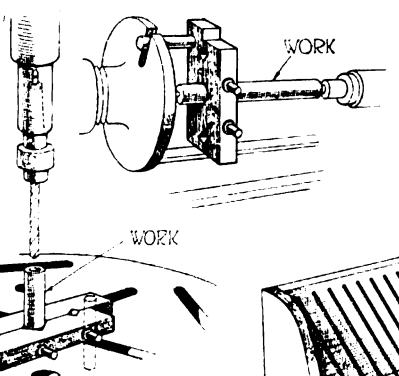
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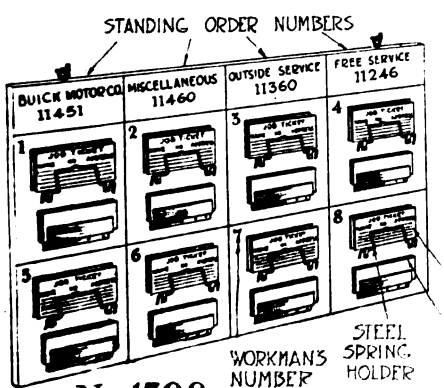
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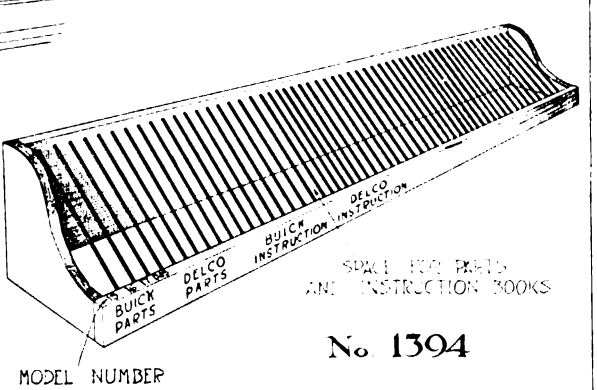
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No. 1388



No. 1394

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Passenger Cars

MOTOR WORLD GUIDE

Passenger Cars

This table appears in the first issue every month. It is corrected every month and brought up to date.

MAKE AND MODEL	Price	No. of Cylinders	Bore and Stroke Inches	S.A.E. H.P.	Piston Displacement Cubic Inches	High Gear Ratio	Make of Engine	Cylinder Shape	Camshaft Drive	Water Circulation	LUBRICATION System	LUBRICATION Type of Pump	ELECTRIC SYSTEM Make	ELECTRIC SYSTEM Voltage	IGNITION Make	IGNITION Plug	CARBURETION Make of Carbureter	CARBURETION Fuel Feed	CARBURETION Clutch Type	TRANSMISSION GEARSET Location	TRANSMISSION GEARSET Forward Speeds	TRANSMISSION GEARSET Make	TRANSMISSION Final Drive	TRANSMISSION Car Drives Through	TRANSMISSION Rear Axle Type	TRANSMISSION Make of Rear Axle	TRANSMISSION Torque Taken By	RUNNING GEAR Wheelbase	RUNNING GEAR Tires	RUNNING GEAR Rims	RUNNING GEAR Wheels	RUNNING GEAR Rear Springs	Make of Speedometer	Number Crankshaft Bearings	BEARINGS Gearset	BEARINGS Rear Axle	BEARINGS Front Wheel
Abbott	$1295	6	3½x4½	25.3	224.0	4.75	Cont...	L.	H...	P.	Sp-Pr...	P.	Remy-1.	6	Remy...		Stmbg...	V.	P..	Unit M..	3	.. ..	Sp.B..	Springs..	¾ F..	Salsbry..	Springs..	122	32x4	SS...	Wd.	S-E...	Stewart.	3	B...	R...	R...
Abbott	1595	6	3½x5½	29.4	303.1	4.03-1	Cont...	L.	H...	T.	Sp-Pr...	C.	Remy...	6	Remy...		Stmbg...	V.	P..	Unit M..	3	.....	Sp.B..	Springs..	F...	Salsbry..	Springs..	122	34x4	SS...	Wd.	S-E...	Stewart.	3	R...	R...	R...
Allen	895	4	3½x5	22.5	220.9	4.00-1	Own...	L.	H...	T.	Cir-Sp...	P.	West-2..	6	West...		Stmbg...	V.	C..	Unit M..	3	Own.....	Bevel.	Springs..	F...	Adams..	Tor.T...	112	32x3½	SS...	Wd.	S-E...	Stewart..	2	BP..	B...	B...
American	1375	6	3½x5	23.4	230.1	4.42-1	Amco...	L.	H...	P.	Cir-Sp...	P.	G&D-2..	6	G&D...		Zenith...	V.	P..	Unit M..	3	Mech....	Sp.B..	Springs..	¾ F..	Salsbry..	Springs..	122	32x4	SS...	Wd.	S-E...	VanS...	3	BP..	BR.	B...
Amerian	875	4	3½x4½	15.6	138.1	4.25-1	LeRoi...	L.	H...	T.	Sp-Pr...	P.	Bosch-2.	12	Bosch...		Stmbg...	G.	P..	Unit M..	3	Covert...	Bevel.	Springs..	S-F.	Special..	Springs..	110	30x3½	.....	Wd.	S-E...	Warner..	..	R...	R...	B...
Ams-Sterling	875	4	3½x4½	25.3	224.0	4.42-1	Cont...	L.	H...	P.	Sp-Pr...	P.	West-2..	6	Conn...		Zenith...	G.	P..	Unit M..	3	Detroit...	Bevel.	Springs.	S-F.	Hess....	Springs..	120	33x4	....	Wd.	S-E...	Stewart..	3	B...	B...	B...
Anderson	1395	6	3½x5	29.4	288.6	4.25-1	Own...	L.	H...	P.	Pr.....	G.	Bijur-2..	6	Remy...		Rayfield.	V.	P..	Amid...	3	Own.....	Sp.B..	Springs..	F...	Own....	Springs..	130	34x4	SS...	Wd.	¾ Ell.	VanS...	4	R...	R...	R...
Apperson	1990	6	3½x5	29.4	288.6	4.25-1	Own...	L.	H...	T.	Pr.....	G.	Bijur-2..	6	Remy...		Johnson.	V.	P..	Amid...	3	Own.....	Sp.B..	Springs..	F...	Own....	Springs..	130	35x4½	SS...	Wd.	¾ Ell.	VanS...	3	R...	R...	R...
Apperson	2250	8	3½x5	33.8	306.8	4.64-1	Own...	L.	H...	P.	Cir-Sp...	P.	Remy-2.	6	Remy...		Rayfld...	V.	P..	Unit M..	3	.....	Sp.B..	Springs..	¾ F..	Clumba.	Tor.T...	120	34x4	SS...	Wd.	S-E...	Stewart.	3	BP..	R...	B...
Auburn	1195	6	3½x5	23.4	230.1	4.42-1	Tretor..	L.	H...	P.	Cir-Sp...	P.	Remy-2.	6	Remy...		Rayfld...	V.	P..	Unit M..	3	.....	Sp.B..	Springs..	¾ F..	Clumba	Tor.T...	131	35x4½	SS...	W-t	Cant..	Stewart.	3	B...	R...	B...
Auburn	1635	6	3½x5½	29.4	303.1	4.00-1	Cont...	L.	H...	P.	Cir-Sp...	P.	Delco-1..	6	Delco...		Stmbg...	V.	D..	Unit M..	6	Muncie...	Sp.B..	Springs..	F...	Own....	Springs..	142½	34x4½	QD..	Wd.	DCant	Warner..	4	B...	BR.	R...
Austin	3750	12	2¼x 5	39.7	389.5	3.75-1	Widly...	L.	H...	P.	Pr.....	G.	Delco-2..	6	Delco...		Zenith...	V.	D..	Unit M..	3	Covert...	Bevel.	Springs..	¾ F..	Adams..	Springs..	112	31x4	.....	Wd.	¾ Ell..	Stewart..	2	R...	R...	B...
Bell	895	4	3½x5	19.6	192.4	4.25-1	Lycmg..	L.	H...	P.	Spl-Pr...	..	West-2..	....	Bosch...		.....	V.	P..	Unit M..	3	.....	Sp.B..	.....	F...	Timken..	.....	126	35x4½	.....	Wd.	S-E...	.....	4	B...	R...	R...
Ben Hur	1875	6	3½x5½	29.4	303.1	4.45	Buda...	L.	H...	T.	Cir-Sp...	G.	G&D-2..	6	Dixie...		Zenith...	V.	P..	Unit M..	4	.....	Bevel.	Springs..	¾ F..	Special..	Springs..	122	32x4	QD..	Wr..	¾ Ell..	Warner..	3	B...	BR.	B...
Biddle	2275	4	3½x5½	22.5	226.4	4.00-1	Buda...	L.	H...	P.	Sp-Pr...	P.	G&D....	6	Remy...		Stmbg...	V.	P..	Unit M..	3	Detroit..	Sp.B..	Springs..	¾ F..	Salsbry..	Springs..	118	32x4	QD..	Opt..	S-E...	Warner..	3	BP..	BR.	B...
Bour-Davis	1385	6	3½x4½	25.3	224.0	4.42-1	Cont...	L.	S...	P.	Sp-Pr...	P.	G&D....	6	Remy...		Stmbg...	V.	P..	Unit M..	3	Detroit..	Sp.B..	Springs..	¾ F..	Salsbry..	Springs..	118	32x4	QD..	Opt..	S-E...	Warner..	3	BP..	BR.	B...
Bour-Davis	1785	....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Brewster	5000	4	4 x5½	25.3	276.5	4.50-1	Own...	I.	C...	P.	Pr.....	G.	U.S.L....	12	Bosch...		Zenith...	V.	C..	Unit T..	3	Own.....	Sp.B..	Tor.T...	F...	Own....	Tor.T...	125	34x4½	SS...	Wd.	Cant..	Stewart..	3	Brp.	B...	R...
Briscoe	725	4	3⅛x5½	16.3	163.5	4.23-1	Own...	L.	H...	T.	Cir-Sp...	P.	A-Lite...	6	Conn...		Buick...	G.	C..	Unit X..	3	Own.....	Bevel.	Tor. A..	S-F.	Own....	Tor.R...	104	30x3½	C....	Wd.	Ell...	Stewart..	2	Brp.	BR.	B...
Buick	795	4	3½x4½	18.2	170.0	4.08-1	Own...	I.	H...	P.	Cir-Sp...	P.	Delco-1..	6	Delco...		Marvel..	V.	DD	Unit M..	3	Own.....	Bevel.	Springs..	F...	Timken.	Tor.T...	106	31x4	C....	Wd.	S-E...	Stewart..	3	BR.	BR.	B...
Buick	1265	6	3½x4½	27.3	241.6	4.08-1	Own...	I.	H...	P.	Cir-Sp...	G.	Delco....	6	Delco...		Marvel..	V.	DD	Unit M..	3	Own.....	Sp.B..	Tor.T...	F...	Timken.	Tor.T...	115	34x4	SS...	Wd.	Cant..	Stewart..	4	B...	BR.	B...
Buick	1495	6	3½x4½	27.3	241.6	4.25-1	Own...	I.	H...	P.	Sp.....	G.	Delco...	6	Delco...	....	Marvel..	V.	P .	Unit M..	3	Own.....	Sp.B..	Tor.T...	F...	Timken.	Tor.T.	124	34x4½	SS...	Wd.	Cant..	.....	4	B...	RB.	B...
Cadillac	2590	8	3½x5½	31.2	314.4	4.37-1	Own...	L.	C...	P.	Pr.....	G.	Delco-1..	6	Delco...		Own....	P.	D..	Unit M..	3	Own.....	Sp.B..	Springs..	F...	Timken..	Tor.R..	125 132	35x5	SS...	Wd.	Plat..	.....	3	B...	R...	R...
Cameron	1250	6	3 x5	21.6	212.0	4.00-1	Amco...	L.	H...	P.	Sp-Pr...	P.	G&D-2..	6	G&D...		Zenith...	V.	P..	Unit X..	3	Own.....	Sp.B..	Rad.Rd.	¾ F..	Own....	Tor.T...	122	32x4	.....	Wr..	Cant..	.....	3	B...	B...	B...
Case	1190	4	3½x6	21	247.7	4.40-1	Own...	L.	H...	T.	Pr.....	P.	A-Lite-2	6	Conn...		Rayfld..	G.	C..	Unit M..	3	Own.....	Sp.B..	Tor.T...	¾ F..	Salsbry..	Tor.T...	120	34x4	SS...	Wd.	Cant..	Stewart..	3	RP..	R...	R...
Case	1875	6	3½x5½	29.4	303.1	4.55-1	Cont....	L.	H...	P.	Sp-Pr...	G.	West...	6	West...		Rayfld..	V.	P..	Unit M..	3	G-Lees....	Sp.B..	Springs..	¾ F..	Clumba.	Springs..	125	35x4½		Wd.		Stewart..	3	B...	R...	R...
Chalmers	1250 1350	6	3½x4½	25.3	224.0	4.75-1	Own...	L.	C...	T.	Sp-Pr...	G.	West-2..	6	Remy...		Stmbg...	V.	P..	Unit M..	3	Own.....	Sp.B..	Springs.	S-F.	Timken.	Springs.	117 122	32x4 34x1	SS...	Wd.	S-E...	Stewart..	3	R...	R...	R...
Chandler	1595	6	3½x5	29.4	288.4	4.40-1	Own...	L.	C...	P.	Cir-Sp...	P.	G&D-2..	6	Bosch...		Rayfld..	V.	D..	Unit M..	3	Own.....	Sp.B..	Tor.T...	F...	Own....	Tor.T...	123	34x4	SS...	Wd.	S-E...	Warner..	3	B...	B...	R...
Chevrolet	490	635	4	3½x4	21.7	170.9	3.67-1	Own...	I.	H...	P.	Sp-Pr...	G.	A-Lite-2.	6	Remy...		Zenith...	G.	C..	Unit M..	3	G-Lees....	Bevel.	Springs..	¾ F..	Own....	Springs..	102	30x3½	C....	Wd.	Cant..	Stewart..	3	B...	R...	B...
Chevrolet	FA	935	4	3½x5½	21.7	170.9	4.25-1	Own...	I.	H...	T.	Sp-Pr...	G.	A-Lite-2.	6	Remy...		Zenith...	V.	C..	Unit M..	3	Warner...	Bevel.	Springs..	¾ F..	Own....	Springs..	108	33x4	SS...	Wd.	Cant..	Stewart..	3	BP..	R...	B..
Chevrolet	D	1385	8	3½x4	36.5	286.3	4.25-1	Own...	I.	H...	P.	Cir-Sp...	G.	A-Lite-2.	6	Remy...		Zenith...	V.	C..	Unit M..	3	Warner...	Sp.B..	Springs..	¾ F..	Own....	Tor.T...	120	34x4	SS...	Wd.	Cant..	Stewart..	3	BP..	R...	B...
Cole	8 60	1995	8	3½x4½	39.2	346.4	4.45-1	North...	L.	S...	P.	Pr.....	G.	Delco-2..	6	Delco...		Stmbg...	V.	C..	Unit M..	3	Own.....	Sp.B..	Springs..	F...	Clumba.	Springs..	127	35x4½	SS...	Wd.	S-E...	Warner..	3	BP..	R...	R...
Columbia	1295	6	3½x4½	25.3	224	4.75	Cont....	L.	H...	P.	Sp-Pr...	..	W-Lnr-2	....	A.Kent..		Stmbg...	V.	G	Unit M..	3	Warner..	Sp.B..	Springs.	¾ F..	Timken..	Tor.A...	115	32x4	SS...	Wd.	Cant..	Stewart..	4	B...	R...	R...
Commonwealth Ultra	4-40	965	4	3½x5	19.6	192.4	4.00-1	Lycmg..	L.	H...	T.	Cir-Sp...	G.	Dynto-2.	6	A.Kent..		Carter...	V.	D..	Unit M..	3	Drstn....	Bevel.	Springs.	F...	Peru....	Springs..	110	32x3½	C....	Wd.	¾ Ell..	Stewart..	2	B...	R...	B...
Crawford		1750	6	3½x5½	29.4	303.1	4.50	Cont....	L.	H...	P.	.....	..	West-2..	....	Bosch...		Stmbg...	..	P..	Unit M..	....	.....	Sp.B..	.....	¾ F..	Timken..	.....	120	34x4	.....	.....	.....	.....	3	R...	R...	R...
Crow-Elkhart	CE-33-35	935	4	3½x5	19.6	192.4	4.25-1	Lycmg..	L.	H...	T.	Cir-Sp...	P.	Dynto-2.	6	Conn...		Zenith...	G.	P..	Unit M.	3	Covert...	Bevel.	Tor.T...	F...	Peru....	Tor.T...	114½	32x3½	SS...	Opt.	¾ Ell..	Stewart.	2	B...	R...	B...
Cunningham	V	4250 4750	8	3½x5	45	441.7	4.08-1	Own...	L.	H...	P.	Pr.....	G.	West-2..	6	West....		Stmbg...	V.	D..	Unit M..	3	B-Lipe...	Sp.B..	Springs..	F...	Timken.	Tor.T...	132 142	35x5	Opt.	Opt.	¾ Ell..	Warner.	3	R...	R...	R...
Daniels	A	3100	8	3½x5	33.8	331.8	4.45-1	Her-Sp..	L.	H...	P.	Pr.....	G.	West-2..	6	West....		Zenith...	V.	D..	Unit M..	3	B-Lipe...	Sp.B..	Springs..	¾ F..	Timken..	Tor.T...	127	34x4½	QD R	Wd	S-E...	Warner..	3	BR.	R...	R...
Darling	130	2250	6	3½x5½	29.4	.....	.....	Cont....	L.	.....	P.	Pr.....	C.	Bijur....	....	A.Kent..		Stmbg...	V.	DD	.....	3	.....	.....	.....	F...	Timken..	.....	130	33x1½	SS...	Wr	S-E...	Stewart.	.....	.....	.....	.....
Davis	H-I	1295	6	3½x4½	25.3	224.0	4.42-1	Cont....	L.	H...	P.	Sp-Pr...	P.	Delco-2..	6	Delco...		Stmbg...	V.	C..	Unit M..	3	Warner...	Sp.B..	Springs..	¾ F..	Clumba.	Springs..	119	34x4	.....	Wd.	S-E...	Stewart..	3	B...	R...	B...
Davis	J	1595	6	3½x5½	29.4	303.1	4.42-1	Cont....	L.	H...	P.	Sp-Pr...	G.	Delco-2..	6	Delco...		Stmbg...	V.	C..	Unit M..	3	.....	Sp.B..	Springs..	F...	Clumba.	Springs..	124	34x4½	.....	Wd.	S-E...	Stewart..	3	B...	R...	R...
Davis	G	1210	4	3½x5	22.5	220.9	4.00-1	Wis.....	L.	H...	T.	Pr.....	G.	USL.-1..	12	Bosch...		Ball....	V.	P..	Unit M..	3	Detroit...	Sp.B..	Springs..	S-F.	Timken..	Springs..	119	33x4	SS...	Wd.	S-E...	Stewart..	3	BP..	R...	R...
Detroiter	Six-45	1395	6	3½x4½	25.3	224.0	4.75-1	Lycmg..	L.	H...	T.	Cir-Sp...	P.	Dynto-2.	6	Conn...		Rayfld..	V.	....	Amid...	4	Own.....	Dbl C.	Rad.Rd.	D...	Own....	Rad.Rd.	120	36x3½	QD.	Wd.	Ell...	Corbin..	3	B...	B...	B...
Dispatch	G	1210	4	3½x5	22.5	220.9	4.00-1	Wis.....	L.	H...	T.	Cir-Sp...	P.	Dynto-2.	6	Conn...		Carter...	V.	D.	Unit M..	3	G-Lees....	Sp.B..	Tor.T...	F...	Peru....	Tor.T...	112	32x3½	SS...	Wd.	¾ Ell..	VanS...	2	Brp.	BR.	B...
Dixie Flyer	LS-35	895	4	3½x5	16.9	165.9	4.75-1	Lycmg..	L.	H...	P.	Sp-Pr...	P.	Wagnr-2	12	Doble...		Dbl-Stbg	P.	.....	.....	.....	.....	.....	.....	Springs..	S-F.	Americ'n	Tor.A...	135	35x5	.....	Wd.	S-E...	Waltham	2	B...	B.	B...
Doble Steamer		2500	2	5 x4	.....	314.0	1.25-1	Own.....	.....	.....	P.	Cir-Sp...	I.	N-East-1	12	Delco...		Stewart.	V.	D..	Unit M..	3	Own.....	Sp.B..	Springs..	F...	Own....	Tor.T...	114	32x3½	SS...	Wd.	¾ Ell..	J-M....	3	B...	R...	R...
Dodge		835	4	3½x4½	24	212.3	4.00-1	Own....	L.	H...	P.	Pr.....	G.	West-2..	6	Bosch...		Stmbg...	V.	D..	Unit M..	3	Own.....	Sp.B..	Springs..	F...	Timken..	Tor.T...	130	36x4½	SS...	Wd.	S-E...	Warner..	7	R...	R...	R...
Dorris	1-B-6	2785	6	4 x5	38.4	377.0	4.08-1	Own....	I.	H...	P.	Pr.....	G.	West-2..	6	Bosch...		Carter...	G.	C..	Unit M..	3	Mech.....	Bevel.	Springs..	¾ F..	W-Weiss	Tor.T...	105	30x3½	QD..	Wd.	Cant..	Stewart..	2	B...	Brp.	B...
Dort	9	725	4	3½x5	16.9	165.9	4.07-1	Own....	L.	H...	T.	Cir-Sp...	P.	West-2..	6	Conn...		Carter...	G.	C..	Unit M..	3	Mech.....	Bevel.	Springs..	¾ F..	W-Weiss	Tor.T...	105	30x3½	QD..	Wd.	Cant..	Stewart..	2	B...	Brp.	B...
Elcar	D.E.F.	845	4	3½x5	19.6	192.4	4.08-1	Lycmg..	L.	H...	T.	Cir-Sp...	P.	Dynto-2.	6	Delco...		Carter...	V.	P..	Unit M..	3	Mech.....	Sp.B..	Springs..	F...	Salsbry..	Springs..	115	32x3½	SS...	Opt.	S-E...	Stewart..	2	BP..	BR.	B...
Elgin		1095	6	3 x4½	21.6	180.2	4.50-1	Falls....	I.	H...	T.	Cir-Sp...	P.	Wagnr-2	6	Remy...		Stmbg...	V.	P..	Unit M..	3	.....	Sp.B..	Springs..	F...	Adams..	Tor.A...	116	33x4	.....	Opt.	Cant..	Stewart..	3	B...	R...	B...
Empire	50-51	1165	4	3½x5	24	235.8	4.00-1	Teetor..	T.	H...	T.	Cir-Sp...	..	A-Lite-2.	6	Conn...		Stmbg...	V.	D..	Unit M..	3	Mechs....	Bevel.	Springs..	S-F.	Peru....	Tor.T...	115	33x4	SS...	Wd.	S-E...	Stewart..	3	BP..	R...	B...
Empire	70A	1345	6	3½x4½	25.6	224.0	4.58-1	Cont....	L.	H...	P.	Sp-Pr...	..	A-Lite-2.	6	Conn...		Stmbg...	V.	C..	Unit M..	3	Mechs....	Sp.B..	Springs..	S-F.	Hess....	Springs..	120	34x4	SS...	Wd.	S-E...	Stewart..	3	BP..	BR.	B...
	71	1285	6					Cont....																							Wd.						
Fiat	55-E-17	5500	4	5½x6½	42	557.0	2.75-1	Own....	L.	H...	P.	Pr.....	G.	West-2..	6	Bosch...		ZenithSp	P.	D..	Amid...	4	Own.....	Bevel.	Tor.T...	F...	Own....	Tor.T...	140	35x5	QD.	Wd.	S-E...	Warner..	3	B...	B...	B...
Ford	T	360	4	3¾x4	22.5	176.7	3.63-1	Own....	L.	S...	T.	Sp-Gr...	F.	Own....	12	Own...		Hol-Kng	G.	D..	Unit M..	2	Own.....	Bevel.	Tor.T...	S-F.	Own....	Tor.T...										

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PASSENGER CARS—Continued

MAKE AND MODEL	Price	No. of Cylinders	Bore and Stroke, Inches	S.A.E. H.P.	Piston Displacement Cubic Inches	High Gear Ratio	Make of Engine	LUBRICATION: Cylinder Shape	Camshaft Drive	Water Circulation	LUBRICATION: System	LUBRICATION: Type of Pump	ELECTRIC SYSTEM: Make	ELECTRIC SYSTEM: Voltage	IGNITION: Make	IGNITION: Plug	CARBURETION: Make of Carbureter	CARBURETION: Fuel Feed	Clutch Type	TRANSMISSION: GEARSET: Location	GEARSET: Forward Speeds	GEARSET: Make	TRANSMISSION: Final Drive	TRANSMISSION: Car Drives Through	TRANSMISSION: Rear Axle Type	TRANSMISSION: Make of Rear Axle	TRANSMISSION: Torque Taken By	RUNNING GEAR: Wheelbase	RUNNING GEAR: Tires	RUNNING GEAR: Rims	RUNNING GEAR: Wheels	RUNNING GEAR: Rear Springs	Make of Speedometer	Number Crankshaft Bearings	BEARINGS: Gearset	BEARINGS: Rear Axle	BEARINGS: Front Wheel
Oldsmobile....37	$1185	6	2¹³⁄₁₆x4¹⁄₂	18.9	178.2	4.42-1	North...	I.	H...	P.	Cir-Sp...	G.	Delco-2..	6	Delco...		Johnsn..	V.	C.	Unit M.	3	Own.....	Sp.B..	Springs..	F...	West.M.	Springs .	112	32x4	SS...	Wd	S-E...	Stewart..	3	BR	BR.	R...
Oldsmobile.....45	1467	8	2¹⁄₂x4¹⁄₂	26.4	246.7	4.92-1	North...	L.	H...	P.	Pr.....	G	Delco-2..	6	Delco...		Johnsn..	V.	C.	Unit M..	3	.....	Sp.B..	Springs.	F..	West.M.	Springs.	120	34x4	SS...	Wd.	½ Ell.	Stewart..	2	BR..	BR.	R...
Olympian.....	965	4	3¹⁄₂x4¹⁄₂	22.5	187.7	4.08-1	.....		C.	T.	.....		A-Lite-2.	6	Conn .		Carter ..	V.	D..		3	.....		Springs..	F		Springs.	114	(2x3½	....	Wd.			3	B .	R...	B...
Overland.....90	750	4	3½x5	18.2	178.9	3 75-1	Own....	L.	H...	T.	Cir-Sp...	P	A-Lite-1.	6	Conn...		Tilltsn..	V.	C..	Unit X..	3	Own.....	Bevel	Tor T...	F..	Own....	Tor.T...	106	31x4	C....	Wd.	Cant..	Stewart.	2	BR	BR.	R...
Overland.....85-B-4	895	4	4¼x4½	27.2	240.5	4.00-1	Own....	L.	H...	T	Cir-Sp...	G.	A-Lite-2.	6	Conn...		Tilltsn..	V.	C..	Unit X..	3	Own.....	Bevel	Tor.T...	F..	Own....	Tor.T...	112	32x4	SS...	Wd	Cant..	Stewart..	5	BR	BR	R...
Overland.....89	1295	6	3½x5½	29.4	303.1	4.00-1	Cont....	L.	H...	P.	Pr.....	G	A-Lite-2.	6	Conn...		Tilltsn..	V.	C..	Unit X..	3	Own.....	Sp.B.	Tor.T...	F..	Own....	Tor.T...	120	33x1	SS...	Wd	Cant..	Stewart..	3	BR	BR	R...
Owen Magnetic.....M-25	3300	6	3½x5½	29.4	303.1	4.08-1	Cont....	L.	H...	P.	Sp-Pr...	P	Own...	14	Bosch...		Zenith...	V.	Om	.....	6	.....	Sp.B.	Springs.	F..	Timken..	Springs..	125	34x4½	SS...	Wd	½ E...	Warner..	3	....	R..	R...
Owen Magnetic.....O-36	3950	6	3½x5½	33.6	364.5	3.50-1	Buda....	L.	H...	P.	Sp-Pr...	G.	Own....	28	Bosch...		Zenith...	V.	Om	.....	6	.....	Sp.B..	Springs,.	F...	Amer...	Tor.T...	136	35x5	SS...	Wr..	S-E...	Warner..	4	....	R..	R...
Packard.....{3-25 / 3-35	3700 / 4100	12	3 x5	43.2	424.1	4.36-1	Own....	L.	C...	P.	Pr.....	G.	Bijur-2..	6	Delco...		Own....	P.	D.	Unit M..	3	Own.....	Sp.B..	Springs..	S-F	Own....	Tor.A..	128 / 136	35x5	QD..	Wd	S-E....	Walthm.	3	B . .	B...	R...
Paige.....6-39	1260	6	3½x5½	23.4	230.1	4.41-1	Rutnbr..	L.	H...	P.	Sp-Pr...	P	G&D-2	6	Remy...		Stmbg..	G.	D..	Unit M..	3	Own.....	Sp.B..	Tor.T...	¾ F..	Salsbry..	Tor.T...	117	32x4	SS...	Wd	Cant..	Stewart..	3	BR.	BR	B...
Paige.....6-46	1450	6	3½x5½	29.4	303.1	4.35-1	Cont....	L.	H...	P.	Sp-Pr...	P.	G&D-2.} Remy-2}	6	Remy...		Rayfld..	G. V.	D..	Unit M..	3	Own.....	Sp.B	Springs.	¾ F.	Salsbry..	Tor.T...	124 / 127	35x4½	SS...	Wd	Cant..	Stewart..	3	BR	BR	B...
Paige.....6-51	1595																																					
Pan-American.....	1500	6	3½x5	23.4	230.0	4.45-1	Rutnbr..	L.	H...	P.	Pr.....	P.	G&D...	6	G&D...		Rayfld..	V.		Unit M..	3	Warner...	Sp.B.	Springs..	S-F.	Timken .	Springs.	120	32x4	SS...	Wd.	S-E...	Stewart .	3	B..	R .	R...
Paterson.....6-45	1295	6	3½x4½	25.4	224.0	4.50-1	Cont....	L.	H...	P.	Sp-Pr...	P.	Delco...	6	Delco...	L	Stmbg..	V.	C..	Unit M..	3	Detroit...	Sp.B.	Springs.	F...	Hess...	Springs.	117	32x4	C....	Wd	½ Ell	Stewart.	3	B..	R...	B...
Pathfinder.....3-ABC	3250	12	2¾x5	39.7	389.5	4 33-1	Widly...	I.	H...	P.	Pr.....	G.	Delco-1..	6	Delco...		Stmbg..	V.	D..	Unit M..	3	B-Lipe...	Sp.B	Tor.A...	F...	Amer...	Tor.T...	130	35x5	SS...	Wr.	½ Ell	Stewart.	3	R..	R...	R...
Peerless.....56	2340	8	3½x5	33.8	331.8	4 90-1	Own	L.	H...	P	Pr.....	G.	A-Lite-2.	6	A.Kent..		Ball....	V.	D..	Unit M..	3	B-Lipe...	Sp.B	Springs.	S-F	Timken..	Springs.	125	35x4½	SS...	Wd	Plat...	Warner..	3	BR	R...	R...
Pennsy.....	1035	4	3¾x4½	22.5	187.7	4.00-1	G.B.&S..	L.	C...	T	.....	G.	Dynto-2.	6	Conn...		Zenith...		D..	.....	3	G-Lees...	Bevel	Springs.	S-F	W-Weiss	Spring .	115	32x4	....	Wd	S-E.	Van	3	R..	R...	R...
Pierce-Arrow.....38-C-4	4800	6	4 x5½	38.4	414 7	3.78-1	Own....	T.	H...	P.	Pr.....	G.	West-2..	6	Bosch...		Own....	P.	C..	Amid...	4	Own.....	Sp.B	Springs.	S-F	Own....	Tor.T...	134	36x4½	QD..	Wd.	½ Ell	Stewart..	7	BP..	BR	R...
Pierce-Arrow.....48-B-4	5500	6	4¼x5½	48.6	524.8	3.53-1	Own....	T.	H...	P.	Pr.....	G.	West-2..	6	Bosch...		Own....	P.	C.	Amid...	4	.....	Sp.B	Springs.	S-F	Own....	Tor.T...	142	37x5	QD..	Wd.	½ Ell	Stewart..	7	BP.	BR	R...
Pierce-Arrow.....66-A-4	6500	6	5 x7	60	824.7	2.88-1	Own....	T.	H...	P.	Pr.....	G.	West-2..	6	Bosch...		Own....	P.	C..	Amid ..	4	.....	Sp.B.	Springs.	S-F.	Own....	Tor.T...	147½	38x5½	QD.	Wd.	½ Ell	Stewart..	7	BP.	BR	R...
Pilot.....6-45	1295	6	3½x5	23.4	230.1	4.25-1	Teetor..	L.	H...	P.	Sp-Pr...	G.	Delco-2..	6	Delco...		Tiltsn		P	Unit M..	3	Muncie..	Sp.B	Tor.T...	F..	Hess...	Tor.T...	119	32x4	SS...	Wd	Cant..	Stewart..	3	B..	BR	R...
Premier.....6-B	2285	6	3½x5½	27.3	295.3	4.45-1	Own....	I.	H...	P.	Sp-Pr...	G.	Delco-2..	6	Delco...		Johnson.	V.	P .	Unit M..	3	Detroit...	Sp.B	Springs.	S-F	Timken..	Springs.	125½	35x4½	SS..	Wd.	S-E....	Warner..	3	BP .	R...	R...
Princess.....4-36-F	825	4	3½x4½	22.5	187.7	4.25-1	G.B.&S..	L.	C...	T.	Cir-Sp...	P.	Disco-2..	6	Splitdrf..		Schblr...	V.	D..	Unit M..	3	G-Lees...	Sp.B..	Springs.	F..	Own....	Springs.	108	32x3½	....	Wd.	½ Ell	Van	3	BR.	BR.	B...
Pullman.....424-32	860	4	3½x4½	22.5	187.7	4.50-1	G.B.&S..	L.	C...	T.	Sp-Pr...	P.	Dynto-2.	6	A.Kent..		Stmbg...	V.	D..	Unit M..	3	Detroit...	Bevel	Springs.	F...	Peru....	Tor.T...	114	31x4	C....	Wd.	Cant..	Stewart.	3	B..	R...	R...
Regal.....4-32	795	4	3½x4½	19.6	182.8	4.25-1	Own....	L.	H...	T	Cir-Sp...	P.	A-Lite .	6	A.Kent..		Carter...	V.	C	Unit M..	3	G-Lees...	Bevel.	Tor. T .	F..	Peru....	Tor.T...	108	30x3½	QD..	Wd.	Cant..	Stewart..	3	B...	R...	B...
Reo.....R	985	4	4¼x4½	27.2	240.5	4.30-1	Own....	L.	H...	P.	Cir-Sp...	P.	Remy-2	6	Remy...	L	Johnson.	P.	D..	Amid...	3	Own.....	Sp.B.	Springs.	S-F.	Own....	Tor.A...	115	34x4	SS...	Wd.	½ Ell	Stewart..	3	R...	R...	R...
Reo.....M	1385	6	3⅜x5½	30.4	306 6	4.30-1	Own....	L.	H...	P.	Cir-Sp...	P.	Remy-2.	6	Remy...	L	Rayfld..	V.	D..	Amid..	3	Own.....	Sp.B.	Springs.	F.	Own....	Tor.A...	126	34x4½	SS...	Wd.	Cant..	Stewart.	3	R...	R...	R...
Richmond.....6-17	.....	6	3½x5	29.4	288.6	4.25-1	Own....	L.	H...	P.	Sp-Pr...	P.	Delco-1..	6	Delco...		Stmbg..	V.	C.	Unit M..	3	Own.....	Sp.B.	Springs	¾ F	Own....	Springs.	124	35x4½	....	Wd.	S-E.	.....	3	B..	B...	R...
Roamer.....	1850	6	3½x5	23.4	230.1	4.42-1	Rutnbr..	L.	H...	P.	Sp-Pr...	G.	Bijur-2..	6	Bosch...		Stmbg..	V.	DD	Unit M.	3	G-Lees...	Sp.B.	Springs.	¾ F	Hess...	Springs.	127	34x4	SS...	Wr..	½ Ell	Warner..	3	B..	B...	B...
Ross.....C	1750	6	3½x5½	29.4	303.1	4.64-1	Cont....	L	H...	P.	Pr.....	G.	W-Lnr-2.	6	A.Kent..		Zenith...	V.	D..	Unit M..	3	G-Lees...	Sp.B..	Springs.	¾ F	Amer...	Tor.T...	130	35x4½	SS...	Wd.	½ Ell	.....	3	B...	B...	B...
Saxon.....B-5-R	395	4	2¾x4	12.1	94.0	5.00-1	Cont....	L.	H...	T.	Cir-Sp...	P.	Wagnr-2.	6	A.Kent..		Schblr...	G.	D..	Unit X..	3	.....	Bevel	Tor T .	S-F.	Timken..	Tor.T...	96	30x3	QD..	Wd.	Cant..	Stndrd .	3	RP	BR	B...
Saxon.....S-4	935	6	2¾x4½	19 8	175.3	4.75-1	Cont....	L.	H...	T.	Cir-Sp...	P.	Wagnr-2.	6	Remy...		Stmbg...	G.	D..	Unit X..	3	.....	Sp.B	Tor T...	S-F	Timken..	Tor.T..	112	32x3½	SS...	Wd	Cant..	Stewart..	3	RP	R...	R...
Sayers Six.....	1295	6	3¼x4½	25.3	224.0	.....	Cont				.....		Delco...	6	Delco...		.....	V.	D..	.....		.....	Sp.B.	Springs.	F.	.....	Springs.	.....	32x4	SS	.....	.....	.....		BR.	.....	.....
Scripps-Booth.....G	1250	4	3¹³⁄₁₆x4	21 7	170.9	3.7-1	Mason..	I.	H. .	P.	Cir-Sp...	G.	Remy...	6	Remy...		Zenith...	V.	C.	Unit M..	3	Warner.	Bevel	Springs.	¾ F	W W .	T ar.T..	110	30x3½	SS...	.....	Cant..	Stewart..	2	B.	R...	B...
Scripps-Booth.....D	1425	8	2¾x3½	22.1	162.3	4.80-1	Ferro...	I.	H...	T.	Pr.....	G.	Wagnr-2.	6	Remy...		Zenith...	V.	D.	Unit M..	3	Warner...	Sp B	Springs.	¾ F.	Russell..	Rad.Rd	120	32x4	C....	Wr..	Cant..	Stewart..	2	BP..	BR	B...
Simplex.....	7000	6	4¼x6½	45.9	563.7	.....	Own....	L.	C...	P.	Pr.....	G.	Bosch-2.	12	Eismn...		Newcmb	P.	D..	Unit M..	4	Own.....	Sp.B	Springs.	F..	Own....	Springs.	143½	37x5½	QD	Wd.	S-E....	.....	3	B...	B...	R...
Singer.....17	3800	6	4 x5½	38.4	414.7	3.77-1	Her-Sp..	T.	H...	P.	Pr.....	G.	West-1..	6	Bosch...		Rayfld..	V.	D..	Unit M..	4	Muncie..	Sp.B	Springs.	F	Timken..	Tor.A ..	138	35x5	QD.	Wr.	Cant..	Warner..	3	B...	R...	R...
Standard.....F	2000	8	3½x5	33.8	331.8	4.45-1	Her-Sp..	L.	H...	P.	Pr.....	G.	Apple-2..	6	Splitdrf..		Zenith...	V.	D..	Unit M..	3	G-Lees...	Sp.B	Springs.	S-F	Timken..	Springs.	127	35x4½	....	Wd.	S-E....	Stewart..	3	BR.	Brp	R...
Stanley.....Steamer	2200	2	4 x5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	130	35x4½	SS.	.....	.....	.....	.....	.....	.....	.....	.....
Stearns.....SKL4-32	1785	4	3½x5½	22.5	248.5	4.50-1	Own....	I.	C...	P.	Sp-Pr...	G.	West-2..	12	Remy...		Schblr...	V.	D..	Unit M..	3	Own.....	Sp.B..	Springs.	S-F	Own....	Springs.	119	34x4	QD	Opt.	Cant..	Stewart..	3	BR.	BR	B...
Stearns.....SK8-33	2575	8	3½x5	33.8	331.8	4.75-1	Own....	I.	C...	T.	Sp-Pr...	G.	West-2..	12	Remy...		Rayfld..	V.	D..	Unit M..	3	Own.....	Sp.B..	Springs.	S-F	Own....	Springs.	125	35x4½	QD.	Opt.	Cant..	Stewart.	3	BR.	BR.	BR.
Stephens.....Salient Six	1385	6	3½x4½	25.3	224.0	4.75-1	Own....	L.	H...	P.	Cir.....	G.	Delco6..	6	Delco...		Stmbg..	V.	P.	Unit M..	3	Mech.....	Bevel	Springs.	F.	Hess....	Springs.	117½	32x4	....	Wd	S-E.	Van S...	3	B..	R...	BR.
Studebaker.....SF4-40	1050	4	3½x5	24	235.8	4.00-1	Own....	L.	H...	P.	Cir-Sp...	G.	Wagnr-2.	6	Remy...		Schblr...	V.	C..	Unit X	3	Own.....	Bevel	Rad.Rd	F...	Own....	Tor.A...	112	34x4	SS...	Wd.	½ Ell	Stewart..	3	R...	R...	R...
Studebaker.....ED6-50	1385	6	3½x5	36.3	353.8	3.70-1	Own....	L.	H...	P.	Cir-Sp...	G.	Wagnr-2.	6	Remy...		Schblr...	V.	C..	Unit X..	3	Own.....	Bevel	Rad.Rd	F...	Own....	Tor.A...	122	35x4½	SS...	Wd.	½ Ell	Stewart..	4	R...	R...	R...
Stutz.....	2750	...	....	...	....	...	....	...	...	...	....	...	....	...	....	...	....	...	...	.....	...	.....	...	.....	...	.....	.....	130	31x4½	....	.....	.....	.....	...	...	...	...
Stutz.....Bearcat	2550	4	4¼x6	30.6	360 .8	3.66-1	Own....	T.	H...	P	Cir-Sp...		Remy-2.	8	Bosch...		Stmbg...		C.	Unit X..	3	Own.....	Bevel	.....	¾ F..	Own....	Rad.Rd	120	32x4½	SS...	Wr.	S-E....	Stewart..	3	B..	B...	B...
Sun.....18	1345	6	3½x5	23.4	230.1	4.75-1	Own....	L.	H...	P.	Sp-Pr...	P.	Remy-2.	7	Remy...		Rayfld..	V.	P..	Unit M..	3	G-Lees...	Sp.B..	Springs..	F...	Adams.	Springs.	116	34x4	SS...	Wd.	S-E....	Stewart..	3	B...	BR.	B...
Velie.....28	1185	6	3½x4½	25.3	224.0	4.33-1	Cont....	L.	H...	P.	Sp-Pr...	P.	Remy-2.	6	Remy...		Stmbg..	V.	P..	Unit M..	3	Durstn...	Sp.B	Springs..	S-F.	Timken..	Springs.	115	32x4	SS...	Opt.	½ Ell	Stewart..	3	BP..	R...	R...
Velie.....27	1650	6	3½x5½	29.4	303.1	4.08-1	Cont....	L.	H...	P.	Sp-Pr...	P.	Remy-2.	6	Remy...		Stmbg...	V.	P.	Unit M..	4	Muncie...	Sp.B..	Springs..	S-F.	Timken..	Springs.	124	35x4½	SS...	Opt.	½ Ell	Stewart..	3	BR.	R...	R...
Westcott.....S-18	1790	6	3½x5½	29.4	303.1	4.45-1	Cont....	L.	H...	P.	Sp-Pr...	P	Delco-2..	6	Delco...		Rayfld..	V.	D..	Unit M..	3	B-Lipe...	Sp.B..	Springs..	S-F.	Timken..	Tor.T...	125	35x4½	SS...	Wd.	Cant..	Warner..	3	BR.	R...	R...
White.....16 Valve Four	4600	4	4½x5½	28.9	326.3	.....	Own....	T.	H...	P.	Pr.....	G.	Lee-N-2.	12	Bosch...		Own....	V.	P..	Unit M..	4	Own.....	Sp.B..	Springs.	S-F.	Own....	Springs.	137½ / 124½	37x5 / 33x4½	....	Wd.	S-E....	Wh.te..	3	B...	B...	B...
Willys-Knight.....88-4	1450	4	4¼x4½	27.2	240.5	4.30-1	Own....	I.	C...	T	Sp-Pr...	P.	A-Lite-2.	6	Conn....		Tiltsn...	V.	C..	Unit X..	3	Own.....	Sp.B..	Tor.T...	F...	Own....	Tor.T..	121	34x4½	SS...	Wd	Cant..	Stewart..	3	BR.	R...	R...
Willys-Knight.....88-8	1950	8	3½x4	36.4	286.3	4.60-1	Own....	I	C...	T.	Pr.....	P.	A-Lite-2.	6	Remy...		Zenith...	V.	C..	Unit X .	3	Own.....	Sp.B	Tor.T...	F...	Own....	Tor T...	125	34x4½	SS.	Wd.	Cant..	Stewart..	2	BR	R...	R...
Winton.....33	2685	6	3½x5½	33.7	347.9	4.45-1	Own....	L.	C...	P.	Pr.....	P.	Bijur-2..	6	Bosch...		Rayfld..	V.	D..	Unit M..	4	Own.....	Sp.B..	Springs..	F...	Own....	Tor.T...	128	36x4½	QD.	Wd	½ Ell	Warner..	4	BR.	R...	R...
Winton.....48	3500	6	4¼x5½	48.6	524.8	4.08-1	Own....	L.	C...	P.	Pr.....	P.	Bijur-2..	6	Bosch...		Rayfld..	V.	D..	Unit M..	4	Own.....	Sp.B..	Springs..	F...	Own....	Tor.T...	138	37x5	QD.	Wd.	½ Ell	Warner..	4	BR.	R...	R...
Woods.....54	**2950**	**4**	**2¾x1**	**12.1**	.....	.....	**Cont....**	.....	.....	.....	Pr.....	.....	.....	.....	.....	.....	.....	G	.....	.....	.....	.....	.....	.....	**S-F.**	.....	.....	.....	.....	.....	**Cant.**	.....	.....	.....	.....	.....	.....
Yale.....K	**1550**	**8**	**3½x4½**	**31.3**	**276.1**	**4.45-1**	**Mas-Ph.**	**L.**	**C...**	**T.**	**Cir-Sp...**		**Disco...**	**6**	**Remy...**	**J**	**Rayfld..**	**V.**	**D..**	**Unit M..**	**3**	**Muncie....**	**Bevel.**	**Springs.**	**S-F.**	**Timken..**	**Springs..**	**126**	.....	.....	.....	.....	**Stewart..**	**2**	**B...**	**R...**	**R...**

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Lamp Bulbs

MOTOR WORLD GUIDE

Lamp Bulbs

Car	HEAD LAMPS		SIDE LAMPS		TAIL LAMP		DASH LAMP		Fuses. Amp.	Socket	Wiring System	Type of Dimmer	Remarks
	Volt	Cp.	Volt	Cp.	Volt	Cp.	Volt	Cp.					
Abbott-Detroit	6-8	24	6-8	4H	6-8	2	6-8	2	.....	E.S.	S.	.....	Dash Ediswan D.
Allen	6-8	15	6-8	4	6-8	2	6-8	2	15*	E.S.	S.	Resist.	Side, tail and dash fuses 5 amp
American	6-8	15	6-8	4H	3-4	2	3-4	2	20	E.S.	S.	.....	Dash lamp double.
Anderson	6-8	21	6-8	12H	6-8	4	6-8	4	.....	E.S.	S.	.....	
Apperson	6-8	18	.....	.....	6-8	2	6-8	2	10	E.D.	D.	Resist.	
Arbenz	6-8	15	6-8	6	6-8	2	6-8	2	25	E.S.	S.	.....	
Auburn 39	6-8	15	6-8	4	6-8	2	6-8	2	25	E.S.	S.	.....	Dash Ediswan D.
Auburn 44	6-8	18	6-8	12	6-8	2	6-8	2	.....	E.S.	S.	.....	Dash Ediswan D.
Austin	6-8	24	6-8	4H	6-8	4	.....	.....	.....	E.S.	S.	.....	
Bell	6-8	18	6-8	4H	6-8	2	6-8	2	15	E.S.	S.	.....	DashEdiswan D.
Biddle	6-8	21	6-8	4H	6-8	2	6-8	2	10	E.S.	S.	.....	Dash Ediswan D.
Bimel D	6-8	15	.....	.....	6-8	2	6-8	2	.....	E.S.	.....	.....	
Bimel	12-16	15	.....	.....	12-16	2	12-16	2	.....	E.S.	.....	.....	Other models.
Brewster	12-16	40	12-16	4H	6-8	2	6-8	2	10	E.S.	S.	.....	Dash Ediswan D.
Briscoe	6-8	15	.....	.....	6-8	2	6-8	4	10	E.S.	S.	Resist.	Dash Ediswan D.
Bour Davis	6-8	15	.....	.....	6-8	2	6-8	2	.....	E.S.	.....	.....	
Buick	6-8	15	6-8	4H	6-8	2	6-8	2	C.B.	E.S.	S.	.....	
Cadillac	6-8	18	6-8	6	3-4	2	3-4	2	C.B.	E.S.	S.	.....	
Case	6-8	18	6-8	4H	6-8	2	6-8	2	20	E.S.	S.	.....	
Chalmers	6-8	15	6-8	4H	6-8	4	6-8	4	15	.....	S.	Series.	
Chandler	6-8	18	6-8	4H	6-8	2	6-8	2	20	E.S.	S.	.....	
Chevrolet	6-8	12	.....	.....	6-8	2	6-8	2	.....	E.D.	.....	.....	
	6-8	15	.....	.....	6-8	2	6-8	2	.....	E.D.	.....	.....	
Cole	6-8	21	6-8	2H	3-4	2	3-4	2	.....	E.S.	S.	.....	Dash lamp Ediswan D.
Commonwealth	6-8	15	6-8	4H	6-8	4	6-8	2	.....	E.S.	S.	.....	Dash lamp Ediswan D.
Crawford	6-8	15	6-8	4H	6-8	4	6-8	2	15	E.S.	S.	.....	Dash lamp Ediswan D.
Crow-Elkhart	6-8	15	6-8	8H	6-8	2	6-8	2	.....	E.D.	S.	Series.	Dash lamp Ediswan D.
Cunningham	6-8	15	6-8	4	6-8	4	6-8	4	15	E.S.	S.	.....	Tail lamp Ediswan S.
Daniels	6-8	18	6-8	4H	6-8	2	6-8	2	15	E.S.	S.	Warner	Dash lamp Ediswan D.
Davis	6-8	15	.....	.....	6-8	4	6-8	4	.....	E.D.	S.	Resist.	Dash lamp Ediswan D.
Detroiter	6-8	15	.....	.....	6-8	2	6-8	2	.....	E.D.	.....	.....	
Dispatch	12-16	21	.....	.....	12-16	2	6-8	2	2*	E.D.	D.	.....	
Dixie	6-8	15	.....	.....	3-4	2	3-4	2	10	E.D.	D.	Resist.	Fuses 1-2 amp. in tail lamp 1
Dodge	12-16	15	.....	.....	12-16	2	12-16	2	.....	E.S.	S.	Resist.	amp. in dash
Dorris	6-8	15	6-8	4H	6-8	2	6-8	2	15	E.S.	S.	Resist.	
Dort	6-8	15	.....	.....	6-8	4	6-8	2	10	E.S.	S.	Resist.	Dash lamp Ediswan D.
Elgin	6-8	21	6-8	4H	6-8	2	6-8	2	20	E.S.	S.	.....	
Elkhart	6-8	15	6-8	4H	6-8	2	6-8	2	15	E.S.	S.	.....	
Empire	6-8	15	6-8	4H	3-4	2	3-4	2*	20	E.S.	S.	.....	Dash lamp Ediswan D.
Fiat	6-8	15	6-8	4H	6-8	2	6-8	4	.....	E.S.	.....	.....	Tonneau lamp 6 vol. 2 cp.
Ford	6-8	15	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Franklin	12-16	21	12-16	4H	6-8	2	6-8	2	10	E.D.	.....	.....	
Glide	6-8	15	6-8	4H	6-8	2	6-8	2	15	E.S.	S.	.....	
Grant	6-8	15	6-8	4H	6-8	2	6-8	2	20	.....	S.	Resist.	Dash lamp Ediswan D.
HAL	6-8	18	.....	.....	6-8	2	6-8	4	15	E.S.	.....	.....	H'dlamps doub., tail and dash single.
Halladay	6-8	15	6-8	4H	6-8	4	6-8	2	.....	E.S.	S.	.....	Dash Ediswan D.
Harroun	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Dash Ediswan D.
Haynes	6-8	15	6-8	12H	6-8	2	6-8	2	5	E.D.	D.	Series.	
Hollier	6 8	15	...	...	6 8	2	6 8	2	20	E.S.	S	.....	
Howard	6-8	15	6-8	2H	6-8	2	6-8	2	.....	E.S.	S.	.....	
Hudson	6-8	15	.....	.....	3-4	2	3-4	2	.....	E.S.	S.	Resist.	Dash lamp Ediswan D.
Hupmobile	6-8	15	6-8	4	6-8	4	6-8	4	15	E.S.	S.	Resist.	
Inter-State	6-8	15	.....	.....	6-8	2	6-8	2	10	E.S.	S.	Resist.	
Jackson	6-8	15	.....	.....	6-8	2	6-8	2	20	E.D.	S.	.....	
Jeffery	6-8	18	6-8	4H	6-8	2	6-8	2	20	E.S.	.....	.....	
Jordan	6-8	18	6-8	4H	6-8	2	6-8	2	20	E.S.	S.	.....	
King	6-8	18	6-8	4H	6-8	2	6-8	2	10	E.S.	S.	Series.	
Kissel	6-8	18	.....	.....	6-8	2	6-8	2	20	E.D.	S.	.....	Dash lamp single.
Kline	6-8	15	6-8	4H	6-8	4	6-8	4	15*	E.S.	S.	.....	Fuses 5 amp. in all but hdlps.
Lewis	6-8	15	.....	.....	3-4	2	3-4	2	.....	E.D.	S.	Resist.	
Lexington	6-8	21	6-8	8H	6-8	4	6-8	4	15	E.S.	S.	.....	Dash lamp Ediswan D.
Liberty	6-8	15	.....	H	6-8	2	6-8	2	.....	E.S.	S.	.....	
Locomobile	6-8	21	6-8	6	6-8	4	6-8	2	10	E.S.	S.	Resist.	
							6-8						
McFarlan	6-8	24	6-8	12H	6-8	2	6-8	2	10	E.S.	S.	Series.	Dash lamp Ediswan D.
Madison	6-8	15	6-8	6H	6-8	4	6-8	4	.....	E.S.	S.	.....	
Marion A	6-8	18	6-8	4	6-8	2	6-8	2	30	E.S.	.....	.....	
B	6-8	21	6-8	4	6-8	2	6-8	2	30	E.S.	.....	.....	
Marmon	12-16	24	12-16	8H	12-16	4	12-16	4	20	E.S.	S.	.....	
Maxwell	6-8	15	.....	.....	6-8	2	6-8	2	20	E.S.	.....	Resist.	
Mercer	12-16	24	12-16	4	12-16	4	12-16	4	10	E.S.	S.	Warner	
Metz	6-8	15	6-8	4H	6-8	2	6-8	2	50	E.D.	S.	Shad. rays	
Mitchell	6-8	15	.....	.....	6-8	2	6-8	2	15-20	E.D.	S.	Series.	
Moline-Knight	6-8	15	6-8	6H	6-8	2	6-8	4	20	E.S.	S.	Deflect.	
Monroe	6-8	15	6-8	2H	6-8	2	6-8	2	.....	E.S.	S.	.....	
Moon	6-8	15	.....	.....	6-8	2	6-8	4	C.B.	E.S.	S.	.....	Dash lamp Ediswan D.
Murray	6-8	18	6-8	4H	6-8	2	6-8	2	15	E.D.	.....	.....	Dash and tail Ediswan S. Fuses 5 amp. in dimmer
National	6-8	18	6-8	4H	6-8	2	6-8	2	.....	E.S.	.....	.....	Dash lamp double
Oakland	6-8	12	.....	.....	6-8	2	6-8	2	C.B.	E.S.	S.	Resist.	Dash lamp Ediswan D.
Ogren	6-8	12	6-8	6	6-8	6	6-8	6	.....	E.S.	S.	Deflect.	
Oldsmobile	6-8	15	6-8	4H	6-8	2	6-8	2	.....	E.S.	S.	.....	Dash lamp Ediswan D.
Overland	6-8	15	6-8	4H	3-4	2	3-4	2	.....	E.D.	.....	.....	
Owen O-36	28	21	28	4H	28	2	28	2	10	E.D.	D.	.....	Headlamps Ediswan S.
M-25	14	21	14	4H	14	2	14	2	10	E.D.	.....	.....	
Paige-Detroit	6-8	15	6-8	4H	6-8	2	6-8	2	20	E.S.	S.	.....	Dash lamp Ediswan D.
Paterson	6-8	12	6-8	8H	.....	.....	.....	.....	.....	.....	.....	.....	
Packard	6-8	24	6-8	6H	6-8	2	6-8	2	10	E.D.	D.	.....	
Pathfinder	6-8	15	6-8	4H	6-8	2	6-8	2	.....	E.S.	S.	Warner	
Peerless	6-8	15	6-8	4	6-8	2	6-8	2	10	E.S.	S.	.....	
Pierce-Arrow	6-8	21	6-8	4	6-8	4	6-8	4	10	E.S.	S.	Sutterly	
Pilot	6-8	15	.....	.....	6-8	2	6-8	2	.....	E.S.	S.	Resist.	
Porter	12-16	25	12-16	6	12-16	3	12-16	3	6-3	E.S.	S.	.....	Dash lamp double.
Premier	6-8	21	6-8	4H	6-8	2	6-8	2	C.B.	E.S.	S.	.....	
Regal	6-8	21	.....	.....	6-8	4	6-8	2	.....	E.S.	S.	Resist.	
Reo	6-8	15	.....	.....	3-4	2	3-4	2	5	E.D.	D.	Series.	
Ross	6-8	15	.....	.....	6-8	4	.....	.....	.....	E.D.	.....	.....	
Saxon	6-8	12	.....	.....	6-8	2	6-8	2	15	E.S.	S.	Resist.	
Scripps-Booth	6-8	15	6-8	4H	6-8	2	6-8	2	.....	E.S.	S.	Series.	
Simplex	12-16	40	12-16	4H	6-8	2	6-8	2	10	E.S.	S.	.....	Tail lamp double
Singer	6-8	15	.....	.....	6-8	2	6-8	2	5	E.S.	S.	.....	Tail lamp double
Sphinx	6-8	12	6-8	4H	6-8	4	.....	.....	25	E.S.	S.	.....	
Standard	6-8	18	6-8	4	6-8	2	6-8	2	15	E.S.	S.	Series.	
Stanley	6-8	18	6-8	4H	6-8	2	6-8	2	.....	E.D.	D.	Warner	
Stearns SK8	12-16	24	12-16	4H	12-16	2	12-16	2	20	E.S.	S.	.....	
SKL-4	12-16	18	12-16	4H	12-16	2	12-16	2	20	E.S.	S.	.....	Dash lamp double
Stephens	6-8	21	6-8	4	3-4	2	3-4	2	20	E.S.	S.	.....	
Sterling	12-16	15	12-16	4	12-16	2	12-16	2	.....	E.S.	S.	.....	
Studebaker	6-8	12	.....	.....	6-8	2	6-8	2	10	E.S.	S.	Resist.	
Stutz	6-8	21	6-8	4H	6-8	2	6-8	2	.....	E.D.	D.	.....	
Sun	6-8	18	.....	.....	6-8	2	6-8	2	20	E.S.	S.	Resist.	
Velie	6-8	15	6-8	4	3-4	2	3-4	2	5	E.S.	S.	.....	Dash lamp double
Westcott	6-8	15	6-8	4H	3-4	2	3-4	2	.....	E.S.	S.	.....	Dash lamp double
White	12-16	25	12-16	4H	12-16	4	12-16	4	C.B.	E.D.	D.	Warner	
Willys-Knight	6-8	16	.....	.....	3-4	2	3-4	2	.....	E.D.	S.	Series.	Tail lamp Ediswan S.
Winton	6-8	21	6-8	8	6-8	4	6-8	2	15	E.S.	S.	.....	
Woods	60	25	30	8	30	10	30	10	10	E.D.	D.	.....	
Yale	6-8	15	.....	...	3-4	2	3-4	2	.....	E.S.	S.	Series.	Dash lamp Ediswan D.

ABBREVIATIONS:—C.B.—Circuit Breaker. D.—Double wiring system. E.D.—Ediswan double contact. E.S.—Ediswan single contact. H.—Small bulbs in headlamps for city driving. Resist.—Resistance S.—Single wiring system. Series—Series connection

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MOTOR WORLD GUIDE

Trucks

This table appears in the first issue every month. It is corrected every month and brought up to date.

Name and Model	Tons Capacity	Price of Chassis	Wheel Base in Inches	TIRES: Kind	TIRES: Sizes in Ins. Front	TIRES: Sizes in Ins. Rear	MOTOR: Make Engine	MOTOR: No. of Crankshaft Bearings	MOTOR: Cylinders Bore and Stroke	MOTOR: S. A. E. Hp.	MOTOR: Cylinders Cast	MOTOR: Valves Placed	MOTOR: Spark Plug	MOTOR: Cooling—Water Circulation	IGNITION: Type	IGNITION: Make	IGNITION: Spark Advance	IGNITION: Electric System—Type and Make	GOVERNOR: Type	GOVERNOR: Drive	GOVERNOR: Make	SPEED: Motor in r.p.m.	SPEED: Truck in m.p.h.	FUEL SYS.: Carbureter Make	FUEL SYS.: Fuel feed	FUEL SYS.: Tank Location	CLUTCH: Type	CLUTCH: Make	GEARSET: Make	GEARSET: Type	GEARSET: Location	GEARSET: Speeds	GEARSET: Total Gear Reduction in High	Rear Axle	Final Drive	Propulsion Taken By	Torque Taken By	BRAKES: Hand Brake	BRAKES: Foot Brake	Steering Gear
A & B.....3T	3	$4500	144	s..	18x3½d	48x3½d	own...	3	4-5½x14½	42.3	2	L..	..	p. d.	Bosch..	h..	.....	.....	.....	.....	.....	.....	.....	Schblr.	g.	s..	.....	none...	none...	elect	amid..	2	28.0	own....	int-g..	rad-rd.	rad-rd.	ex-r-w..	ex-f-w..	Gemr..
A & B.....5T	5	4750	144	s..	18x3½d	48x5d	own...	3	4-5½x14½	42.3	2	L..	..	p. d.	Bosch..	h..	.....	.....	.....	.....	.....	.....	.....	Schblr.	g.	s..	.....	none...	none...	elect	amid..	2	28.0	own....	int-g..	rad-rd.	rad-rd.	ex-r-w..	ex-f-w..	Gemr..
*Acason.....	1½	2100	.....	...	34x3½	36x5	.....	..	4-3½x5½	19.6	4	L..	..	p. s.	Eismn..	h..	.....	.....	cnt..	motor	Wauk..	1500	18	Schblr.	v.	s..	dd..	.....	.....	selec	unt-m.	3	8¾	Timkn.	worm	sprgs..	sprgs..	int-r-w.	.....	.....
*Acason.....2	2	2400	150	s..	34x4	36x7	Wauk	3	4-4½x5½	29.0	2	L..	..	p. s..	Eismn..	h..	.....	.....	cnt..	motor	Wauk..	1100	17¼	Schblr	v.	..	dd..	.....	.....	selec	unt-m.	4	8¾	Timkn	worm	sprgs..	sprgs..	int-r-w.	int-r-w.	Ross...
*Acason.....	3½	3200	168	s..	36x5	36x6d	Wauk	3	4-4½x5½	29.0	2	L..	..	p. s.	Eismn..	h..	.....	.....	cnt..	motor	Wauk..	1100	13¾	Schblr	v.	..	dd..	.....	.....	selec	unt-m.	4	10½	Timkn	worm	sprgs..	sprgs..	int-r-w.	int-r-w.	Ross...
Acason.....Special	3½	.....	.....	...	34x5	36x6d	Wauk	..	4-4½x5½	29.0	2	L..	..	p. s.	Eismn..	h..	.....	.....	cnt..	motor	Wauk..	1100	13	Stmbg.	v.	s.	p...	.....	.....	selec	unt-m	4	10½	Timkn	worm	sprgs..	sprgs..	int-r-w.	.....	Ross...
Acason.....Special	5	4200	192	...	36x6	40x6	.....	..	4-4½x6½	36.2	2	L..	..	p. s.	Eismn..	h..	.....	.....	cnt..	motor	Wauk..	900	11	Stmbg.	v.	s.	n...	.....	.....	selec	unt-m	3	11½	.....	worm	sprgs..	sprgs..	int-r-w.	.....	.....
Acason..Light Tractor	.....	2500	114	...	34x4	36x7	Wauk	.	4-4½x5½	29.0	41	L..	..	p. s.	Eismn..	h..	.....	.....	.....	.....	.....	1100	17¼	Schblr.	v.	s.	dd..	.....	.....	selec	unt-m	4	9½	Timkn	wo rm	.sprgs.	.sprgs.	int-r-w.	int-r-w.	Ross...
Acason.....Heavy	.....	3800	130	..	34x5	36x6d	Wauk	..	4-4½x6½	36.2	21	L..	..	p. s..	Eismn..	h..	.....	.....	cnt..	motor	Wauk..	900	12	Stmbg..	v.	s..	p...	.....	.....	selec	unt-m.	3	10½	Timkn	worm	sprgs..	sprgs..	int-r-w.	int-r-w.	Ross...
Acme.....B	1	1650	128	p..	34x3	34x4	.....	3	4-3½x5	19.6	4	L..	..	t.. s..	Eismn..	h..	.....	.....	cnt..	motor	Pierce..	1700	22	Rayfld.	v.	..	dd..	.....	.....	selec	unt-m.	3	7.7	.....	worm	sprgs..	sprgs..	int.....	int.....	.....
Acme.....A	2	2300	148*	s..	36x4	36x6	.....	3	4-4½x5½	27.2	4	L..	..	p. s..	Eismn..	f..	l*	.....	cnt..	motor	Pierce..	1300	17	Rayfld.	v.	..	dd..	.....	.....	selec	unt-m.	3	8.5	.....	worm	sprgs..	sprgs..	int.....	int.....	.....
Acme.....C	3½	3100	168*	s..	36x5	40x5d	Cont..	3	4-4½x5½	32.4	2	L..	..	p. s..	Eismn..	f..	l*	.....	cnt..	motor	Pierce..	1200	14	Rayfld.	v.	..	p...	B&Bek.	Covert.	selec	amid..	3	10.2	Timkn	worm	rad-rd.	sprgs..	int-r-w.	int-r-w.	.....
Armleder.....HW	2	2800	166*	s..	36x4	36x7*	Cont..	3	4-4½x5½	27.2	4	L..	..	p. s..	Bosch..	h..	l	.....	cnt..	motor.	Pierce*	1200	16	Schblr	g.	s..	d...	B-Lipe.	B-Lipe.	selec	unt-m.	3	8.8	Timkn	worm	rad-rd.	sprgs..	int-r-w.	int-r-w.	Ross...
Armleder.....KW	3½	3500	156*	s..	36x5	36x5d	.....	3	4-4½x5½	32.4	2	L..	..	p. s..	Bosch..	h..	l	.....	cnt..	motor*	Pierce..	1100	14	Schblr	g.	s..	d...	B-Lipe.	B-Lipe.	selec	unt-m.	3	8.7	Timkn	worm	rad-rd.	sprgs..	int-r-w.	ext-sht.	Gemr..
Atlas.....18	¾	885	106	p..	31x4	31x4	Lycmg	2	4-3½x5	16.9	4	L..	..	t.. s..	Remy..	h..	Remy	.....	.....	.....	.....	600	.....	Carter..	g.	s..	d...	B&Bek.	.....	selec	unt-m.	3	4.7	Hess...	sp-bv..	sprgs..	sprgs..	ext-r-w	int-r-w.	Lvin...
Atterbury.....7R	1½	2275	140½	s..	36x3½	36x5	Cont..	3	4-4½x5½	27.2	4	L..	..	p. s.	Eismn..	f..	.....	.....	cnt..	motor	Pierce..	1200	15	Zenith..	g.	s..	dd..	B-Lipe.	B-Lipe.	selec	unt-m.	4	7.7	Timkn	worm	sprgs..	sprgs..	int-r-w.	int-r-w.	Gemr..
Atterbury.....7C	2	2675	153½	s..	36x4	36x4d	Cont..	3	4-4½x5½	27.2	4	L..	..	p. s.	Eismn..	f..	.....	.....	cnt..	motor	Pierce..	1200	15	Zenith..	g.	s..	dd..	B-Lipe.	B-Lipe.	selec	unt-m.	4	8.5	Timkn	worm	sprgs..	sprgs..	int-r-w.	int-r-w.	Gemr..
Atterbury.....7D	3½	3575	167½	s.	36x5	40x5d	Cont..	3	4-4½x5½	32.4	4	L..	..	p. d.	Eismn..	h..	.....	.....	cnt..	motor	Pierce..	1125	13	Zenith..	g.	s..	dd..	B-Lipe.	B-Lipe.	selec	unt-m.	4	10.3	Timkn	worm	sprgs..	sprgs..	int-r-w.	int-r-w.	Gemr..
Autocar.....21F	2	1815	97	s*..	34x4*	34x5*	own...	2	2-4½x14	18.1	1	L..	..	p. s..	Bosch*.	f..	.....	.....	.....	.....	.....	.....	.....	Stmbg..	..	s..	dp..	own...	.....	prg.	amid..	3	7.1	own....	d-red..	sprgs..	sprgs..	int-r-w.	ext-r-w	.....
Available.....1	1	1775	132*	s..	36x3½	36x5	Cont..	3	4-3½x5	22.5	4	L..	..	t.. s..	Bosch..	f..	.....	.....	none	.....	.....	.....	.....	Stmbg..	g.	s..	dd..	B-Lipe.	B-Lipe.	selec	unt-m.	3	7.0	.....	worm	rad-rd.	sprgs..	int.....	int.....	Ross...
Available.....2	2	2450	156*	s..	36x4	36x7	Cont..	3	4-4½x5½	27.2	4	L..	..	p. s..	Bosch..	f..	.....	.....	none	.....	.....	.....	.....	Stmbg..	g.	s..	dd..	B-Lipe	B-Lipe.	selec	unt-m.	3	7.7	.....	worm	rad-rd.	sprgs..	int.....	int.....	Ross...
Available.....3	3½	3450	168*	s..	36x5	40x5d	Cont..	3	4-4½x5½	32.4	2	L..	..	p. s..	Bosch..	f..	.....	.....	cnt..	motor	Pierce..	1300	15	Stmbg..	g.	s..	dd..	B-Lipe.	B-Lipe.	selec	unt-m.	3	10.3	.....	worm	rad-rd.	sprgs..	int.....	int.....	Ross...
Available.....5	5	4500	168*	s..	36x6	40x6d	Cont..	3	4-4½x5½	32.4	2	L..	..	p. s..	Bosch..	f..	.....	.....	cnt..	motor	Pierce..	1175	12	Stmbg..	g.	s..	dd..	B-Lipe.	B-Lipe.	selec	unt-m.	3	11.7	.....	worm	rad-rd	sprgs..	int.....	int.....	Ross...
Avery.....B	2	2700	128	s..	36x4	36x3½d	.....	..	4-4½x5	36.1	1	L..	..	p. d.	Eismn..	a..	.....	.....	cnt..	motor	.....	1200	14½	Rayfld.	..	..	dd..	.....	.....	selec	unt-js.	3	3.5	.....	d-chn.	.....	rad-rd.	.....	.....	.....
Avery.....B	3	3200	128	s..	38x5	38x4d	.....	..	4-4½x5	36.1	1	L..	..	p. d.	Eismn..	a..	.....	.....	cnt..	motor	.....	1200	13	Rayfld.	..	..	dp..	.....	.....	selec	unt-js.	3	3.5	.....	d-chn.	.....	rad-rd.	.....	.....	.....
Avery.....A	3	2500	140	w..	38x5	38x4d	.....	..	4-4½x5	36.1	1	L..	..	p. d.	Eismn..	a..	.....	.....	cnt..	motor	.....	1200	12	Rayfld.	..	..	dd..	.....	.....	selec	unt-js.	3	3.5	.....	d-chn.	.....	rad-rd.	.....	.....	.....
Barber Tractor.....	6	2500	84	s..	3½x3½	34x7	Buda	.	4-4½x5½	29.0	4	L..	..	p. s.	Bosch..	h..	.....	.....	.....	.....	.....	.....	13	Stmbg..	..	s..	d...	Fuller.	Fuller.	selec	.....	..	..	.....	worm	sprgs..	tor-a..	int-r-w.	ext-r-w	.....
Beck Tractor.....	6	1080	124	....	34x3	34x3½	Cont..	..	4-3½x5	19.6	4	L..	..	p. s.	Bosch..	f..	.....	.....	cnt.	.....	.....	.....	18	Stmbg..	..	s..	dd.	Fuller..	Fuller..	selec	unt-m.	..	6½	Clfor..	int-g..	.....	.....	.....	.....	.....	Lvine..
Beck.....	1½	1275	144	....	34x3½	34x5	Cont.	..	4-3½x5	19.6	2	L..	..	p. s.	Bosch..	f..	.....	.....	cnt.	.....	.....	.....	18	Stmbg..	g.	s..	dd.	Fuller..	Fuller..	selec	unt-m.	..	6½	Clfor..	int-g..	.....	.....	.....	.....	.....	Lvine..
Beck.....	2	1750	144	....	36x3½	36x6	Cont.	..	4-4½x5½	32.4	2	L..	..	p. s.	Bosch..	f..	.....	.....	cnt.	.....	.....	.....	14	Stmbg..	..	..	dd.	Fuller.	Fuller.	selec	unt-m.	..	9	Clfor..	int-g..	.....	.....	.....	.....	.....	Lvine..
Beech Creek.....3A	3	3850	132	s..	36x6	36x6	Wauk	3	4-4½x5½	29.0	2	L..	..	p. s..	Eismn..	h..	.....	.....	cnt..	motor	Wauk..	1000	12	King...	v.	s..	dp.	B-Beik.	own...	selec	amid..	6	8.0	own....	bevl-i.	rad-rd.	sprgs..	ext-r-w	ext-sht	own...
Bessemer.....G	1	1250	124	s..	34x3	34x4	Cont..	3	4-3½x5	19.6	4	L..	..	t.. s..	Dixie..	h..	.....	.....	.....	.....	none..	1350	....	Zenith..	g.	s..	dd..	Fuller..	Fuller..	selec	unt-m.	3	7.0	Torbn..	int-g..	sprgs..	sprgs..	int-r-w.	ext-r-w.	Ross...
Bessemer.....J	2	2200*	158*	s..	36x4	36x4d	Cont..	3	4-4½x5½	27.2	4	L..	..	p. s..	Dixie..	h..	.....	.....	cnt..	motor	Pierce..	1100	15	Rayfld.	g.	s..	c...	Hartfd.	B-Lipe.	selec	amid.	3	8.0	Torbn.i	nt-g..	sprgs..	sprgs..	int-r-w.	ext-r-w.	Ross...
Bessemer.....D	2	2550	140*	s..	36x4	36x4d	Cont..	3	4-4½x5½	27.2	4	L..	..	p. s..	Dixie..	h..	.....	.....	cnt..	motor	Pierce..	1100	15	Rayfld.	g.	s..	c...	Hartfd.	B-Lipe.	selec	amid.	3	7.75	Timkn	worm	sprgs.	sprgs.	int-r-w.	int-r-w	Ross...
Bessemer.....E	3½	3450	150	s..	36x5	36x5d	Cont..	3	4-4½x5½	32.4	2	L..	..	p. s..	Dixie..	h..	.....	.....	cnt..	motor	Pierce..	1160	12	Rayfld	g.	s..	c...	Hartfd.	B-Lipe.	selec	amid..	3	10.3	Timkn	worm	rad-rd.	sprgs..	int-r-w.	int-r-w.	Ross...
Bethlehem.....	1½	1215	126	s..	34x3	34x4	G.B.S.	3	4-3½x4	22.5	4	L..	..	t.. s.	Brlng.	h..	.....	.....	cnt.	d-shft.	Pierce.	1300	18	Schblr	g.	s.	d...	Dtroit.	Dtroit.	selec	unt-m.	3	7.4	Russl..	int-g.	sprgs.	sprgs.	int-r-w.	ext-r-w	.....
Bethlehem.....	2½	1775	144	s..	34x4	34x6	NoAm	3	4-4 x4	25.6	2	L..	..	t.. s.	Brlng.	h..	.....	.....	cnt.	d-shft.	Pierce.	1100	15	Schblr	g.	s.	d...	Dtroit.	Dtroit.	selec	unt-m.	3	8.3	Russl..	int-g.	sprgs.	sprgs.	int-r-w.	ext-r-w	.....
Blair.....C	2	2850	121*	s..	34x4	34x3½d	Wauk.	3	4-4½x5½	29.0	2	L..	..	p. d.	Bosch..	f..	Eismn	.....	cnt..	motor	Wauk..	1050	14	Zenith..	g.	s..	c...	.....	.....	id-e	amid..	3	7.6	.....	worm	sub-f..	sub-f..	int-r-w.	ext-sht	Lvine..
Blair.....D	3	3250	121*	s..	36x5	66x4d	Wauk.	3	4-4½x5½	29.0	2	L..	..	p. d.	Bosch..	f..	Eismn	.....	cnt..	motor	Wauk..	970	12	Zenith..	g.	s..	c...	.....	.....	id-e	amid..	3	8.6	.....	worm	sub-f..	sub-f..	int-r-w.	ext-sht	Lvine..
				...	36x5	36x5d	Wauk.	3	4-4½x6	32.4	2	L..	..	p. d.	Bosch..	a..	Eismn	.....	cnt..	motor	Wauk..	870	10	Zenith..	g.	s..	c...	.....	.....	id-e	amid..	3	9.3	.....	worm	sub-f..	sub-f..	int-r-w.	ext-sht	Lvine..
Blair.....F	5	4250	144*	s..	36x6	36x6d	Wauk.	3	4-4½x6	32.4	2	L..	..	p. d.	Bosch..	a..	Eismn	.....	cnt..	motor	Wauk..	870	10	Zenith..	.....	.....	.....	.....	Owen..	Owen...	id-e	amid..	3	9.3	.....	worm	sub-f..	sub-f..	int-r-w.	ext-sht	Lvine..
Bourne Magnetic..VM	2	3300	143	s..	38x4	36x8	Hercl..	5	5-4 x5	25.6	1	L..	..	p. s..	Eismn.	f..	s, l Entz.	.....	cnt..	motor	Simplx	1350	15	Zenith..	g.	s..	.....	.....	Entz...	prg.	unt-m.	..	9½	Timkn	worm	rad-r..	sprgs.	int-r-w	int-r-w	Ross...
Bourne Magnetic..XM	3½	4000	160	s..	38x5	36x10	Hercl..	5	5-4½x5	29.0	1	L..	..	p. s..	Eismn.	f..	s, l Entz.	.....	cnt..	motor	Simplx.	1100	12	Zenith..	g.	s..	.....	.....	Entz...	prg.	unt-m.	..	12	Timkn	worm	rad-r..	sprgs.	int-r-w	int-r-w	Ross...
Brinton.....H	1	1250	125	p*.	33x4½	33x4½*	Wis..	2	4-3½x5	16.9	4	L..	..	p. s..	.....	f..	l	.....	cnt..	motor	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	selec	unt-m.	3	.....	.....	worm	.....	sprgs.	int.....	ext.....	.....
Brinton.....F	2½	2400	138	s..	36x4	36x6	Cont..	3	4-4½x5	27.2	4	L..	..	p. s..	.....	f..	l	.....	cnt..	motor	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	selec	unt-m.	3	.....	.....	worm	sprgs..	sprgs.	int.....	ext.....	.....
Briscoe.....4-24	½	725	104	p..	30x3½	own...	2	4-3½x5½	16.3	4	L..	..	t.. s.	A-Lite.	h..	s, l A-Lite.	.....	.....	.....	.....	.....	.....	.....	Buick..	g.	d.	c...	own...	own...	selec	unt-x..	3	4.2	own....	bevel..	sprgs..	t-arm.	int-r-w.	ext-r-w	own...
Brockway.....O	1	1450	124*	s..	34x3½	34x4	Cont..	3	4-3½x5	19.6	4	L..	..	t.. s.	Bosch.	f..	.....	.....	suc..	motor	March.	1400	18	Schblr	g.	s.	dd.	Fuller..	Fuller..	selec	unt-m.	3	7.9	Shldn..	worm	sprgs..	sprgs..	int-r-w	int-r-w.	Lvine..
Brockway.....J-2	1½	1825	124*	s..	36x3½	36x5	Cont..	3	4-3½x5	22.5	4	L..	..	p. s..	Bosch.	f..	.....	.....	suc..	motor	March	1250	15	Schblr	g.	s..	c...	Hartfd.	B-Lipe.	selec	amid..	3	8.6	Shldn..	worm	sprgs..	sprgs..	int-r-w	ext-r-w	Lvine..
Brockway.....K-2	2	2125	140*	s..	36x4	36x7*	Cont..	3	4-4½x5½	27.2	4	L..	..	p. s..	Bosch.	f..	.....	.....	suc..	motor	March	1250	15	Schblr	g.	s..	c...	Hartfd.	B-Lipe.	selec	amid..	3	8.6	Shldn..	worm	sprgs..	sprgs..	int-r-w	int-r-w.	Lvine..
Brockway.....R	3½	.....	164*	s..	36x5	36x5d	Cont..	3	4-4½x5½	32.4	2	L..	..	p. s..	Bosch.	h..	l	.....	suc..	motor	March	1200	12	Schblr	g.	s..	dd.	B-Lipe.	B-Lipe.	selec	amid.	3	10.3	Timkn	worm	rad-rd.	sprgs..	int-r-w.	int-r-w.	Lvine..
Buick.....	½	790c	106	...	31x4	31x4	own...	.	4-3½x4½	18.2	4	L..	..	p. s..	Delco.	h..	s, l Delco..	.....	.....	.....	.....	.....	.....	Marvel.	v.	..	dd..	own...	own...	selec	unt-m.	..	4.08	Timkn.	bevel..	.....	.....	int-r-w.	ext-r-w.	.....
Buford.....O-3	2	2250	144*	s..	36x3½	36x3½d	Buda.	3	4-3½x5½	22.5	4	L..	..	p. s..	Eismn.	f..	l	.....	.....	.....	none..	1200	15	Zenith..	g.	d.	c...	Warner	Warner	selec	unt-m.	3	8.5	own...	int-g..	sprgs..	sprgs..	ext-sht	ext-r-w	doss...
Buford.....D-3	3½	3600	175*	s..	38x5	38x5d	Wauk	3	4-4½x6	32.4	4	L..	..	p. s..	Eismn.	f..	l	.....	cnt..	motor	Wauk..	1000	13	Zenith..	v.	s..	dd.	B-Lipe.	B-Lipe.	selec	amid..	4	13.1	Shldn..	worm	rad-rd.	sprgs..	int-f-w.	int-r-w.	Ross...
Chase.....A	1	1725	....	s..	36x3½	36x5	Wauk	3	4-3½x5½	19.6	4	L..	..	p. s..	Bosch..	f..	.....	.....	suc..	motor	March	1200	18	Stmbg..	g.	s..	dd..	Cotta..	B-Lipe.	selec	unt-m.	3	....	Shldn..	worm	sprgs...	sprgs..	int-r-w.	int-r-w.	Lvine..
Chase.....C	1½	2025	138	s..	36x3½	36x3½d	Wauk	3	4-3½x5½	19.6	4	L..	..	p. s..	Bosch..	f..	.....	.....	suc..	motor	March	1000	15	Stmbg..	g.	..	dd..	Cotta..	B-Lipe.	selec	unt-m.	3	....	Shldn..	worm	sprgs..	sprgs..	int-r-w.	int-r-w.	Lvine..
Chase.....B	3½	2475	160	s..	36x4	36x4d	Buda	3	4-4½x5½	27.2	4	L..	..	p. s..	Bosch..	.....	.....	.....	suc..	motor	March	1000	15	Stmbg..	g.	s..	dd.	B-Lipe.	B-Lipe.	selec	unt-m.	3	....	Shldn..	worm	sprgs..	sprgs..	int-r-w.	int-r-w.	Lvine..
Chase.....A	5	.....	16/	s..	36x5	36x5d	Buda..	.	4-4½x5½	27.2	4	L..	..	p. s..	Bosch.	h..	.....	.....	suc..	motor	March	1000	10	Stmbg..	g.	s.	d...	B-Lipe.	B-Lipe.	selec	unt-m.	4	....	Shldn..	worm	sprgs..	sprgs.	int-r-w.	int-r-w.	Lvine.
Chase.....O	3½	3600	175	s..	36x5	36x5d	Buda..	3	4-4½x6	29.0	4	L..	..	p. s..	Bosch.	h..	s, l Dynto.	.....	suc..	motor	March	1000	10	Stmbg..	g.	s.	d...	B-Lipe.	B-Lipe.	selec	unt-m.	4	....	Shldn..	worm	sprgs..	t-arm.	int.....	int.....	.....
Chevrolet.....	1	740	.....	...	.....	.....	.....	..	.....	.....	.....	..	..	..	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Clydesdale.....25	1½	2060	146	s..	36x3½	36x5	Cout..	3	4-3½x5½	.....	4	L..	..	p. s..	Bosch.	h..	.....	.....	cnt..	motor	own...	.....	15	Zenith..	g.	s.	dd.	B-Lipe.	B-Lipe.	selec	unt-m	4	7.7	Timkn.	worm	sprgs..	sprgs..	int-r-w.	int-r-w	R..
Clydesdale.....65	2	2375	162	s..	36x4	36x4d*	Cont..	3	4-4½x5½	27.2	4	L..	..	p. s..	Bosch.	h..	.....	.....	cnt..	motor	own...	1110	14	Zenith..	g.	s.	dd.	B-Lipe.	B-Lipe.	selec	amid..	4	8.5	Timkn.	worm	sprgs..	sprgs..	int-r-w.	int-r-w.	Ross...
Clydesdale.....35	3½	3250	180	s..	36x5	36x5d	Cont..	3	4-4½x5½	32.4	2	L..	..	p. s..	Bosch.	h..	.....	.....	cnt..	motor	own...	1160	12	Zenith..	g.	s.	dd.	B-Lipe.	B-Lipe.	selec	amid..	4	10.3	Timkn.	worm	rad-rd.	sprgs..	int-r-w.	int-r-w.	Ross...
Clydesdale.....25	1	975	122*	p..	33x5	33x5	Cont..	3	4-3½x5	19.6	4	L..	..	t.. s..	Dixie..	f..	s, l Delco.	.....	.....	motor	.....	1500	20	Zenith..	g.	s.	..c	Hartfd.	Dtroit.	selec	unt-m.	3	6.5	Slsby..	bevel..	.....	t-arm	int-r-w.	ext-r-w.	Ross...
Clydesdale.....120	5	.....	180	...	.....	.....	Cont.	3	.....	.....	2	L..	..	p. s..	Bosch.	h..	.....	.....	.....	.....	.....	1170	10	Zenith..	g.	s.	dd.	B-Lipe.	B-Lipe.	selec	amid.	4	13.6	Timkn	worm	rad-rd.	sprgs.	int-r-w.	int-r-w.	Ross...

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TRUCKS—Continued

Name and Model	Tons Capacity	Price of Chassis	Wheelbase in Inches	TIRES Kind	TIRES Sizes in Ins. Front	TIRES Sizes in Ins. Rear	MOTOR Make Engine	No. of Crankshaft Bearings	Cylinders Bore and Stroke	S.A.E. p.	Cylinders Cast	Valves Placed	Spark Plug	Cooling— Water Circulation	IGNITION Type	IGNITION Make	IGNITION Spark Advance	Electric System Type and Make	GOVERNOR Type	GOVERNOR Drive	GOVERNOR Make	SPEED Motor in r.p.m.	SPEED Truck in m.p.h	FUEL SYS. Carburetor Make	FUEL SYS. Fuel Feed	FUEL SYS. Tank Location	TRANSMISSION CLUTCH Type	CLUTCH Make	GEARSET Make	GEARSET Type	GEARSET Location	GEARSET Speeds	Total Year Reduction in High	Rear Axle	Final Drive	Propulsion Taken By	Torque Taken By	BRAKES Hand Brake	BRAKES Foot Brake	Steering Gear
G. A. Schacht	6	4400	168		36x5	40x6d	Buda..									Bosch	h..		cnt..	motor	own....		10	Schblr..				Hartfd.	own....	selec	amid..		14.0	Timkn	worm	rad-rd	t-arm	int-r-w	ext-sht	Barns..
G. V.-Mercedes	F.V.	6		192½	s..	34x5	40x6d	own...	3	4-4½x5½	29.0	2	i..		p	s..	Bosch..	f...		cnt..	motor	own....	850	10	own....	p.	s..	c....		selec	amid..	4	9.3		int-g.	rad-rd.	t-arm.	ext-r-w	ext-sht.	
Gem		½	675		p..	31x4	31x4	GB&S	3	4½x4½	22.5	4	i..		t.	s..	Conn..	h..	s, l Dynto						Carter		s.	dd..	GB&S..	G-Lees.	selec	unt-m	3	4-1	W-W..	bevel	sprgs..	sprgs..	in t-r-w	ext-r-w	Fostr..
Geneva		1		96	s..	34x2	36x2½			2-5½x4½	22.1	1	i..			s..	Simms..	f...					18	Schblr..			dp..		pln.	unt-j..	2			d-chn	rad-rd				
Gersix	C	2½	2500	150	s..	36x4	36x7	Wis...	4	6-3½x5½	33.8	6	i..			s.	West..	h..	s, l West..	suc..	motor	Mnrch	1050	13	Rayfld	v..		dp..	B&Bek.	Cotta	id-c	unt-m.	3	8.6	Emnir..	worm	sprgs..	sprgs..	int-r-w.	ext-r-w	Ross..
Globe		1	1375	132	s..	34x3½	34x4	Cont..	3	4-3½x5	19.6	4	i..		p.	s.	Eismn.	f...		cnt..	motor	Pierce..			Master.	v.	s.	dd..	B&Bek.	Covert	selec	unt-m.	3	....	Clf or..	int-g..	sprgs..	sprgs..	int-r-w.	e t-r-w	Lvine..
Globe		1½	1690	144	s..	36x3½	36x5	Cont..		4-3½x5½	22.5	4	i..		p.	s.	Eismn.	f...		cnt..	motor	Pierce..			Master.	v.	s.	dd..	B&Bek.	Covert	selec	unt-m.	3	....	Clf or..	int-g..	sprgs..	sprgs..	nt-r-w.	ext-r-w	Lvine..
Globe		2	1980	154	s..	36x4	36x6	Cont..		4-4½x5½	27.2	4	i..			s.	Eismn.	f...		cnt..	motor	Pierce..			Master.	v.	s.	dd..	B&Bek.	Covert.	selec	unt-m.	3	....	Clf or..	int-g..	sprgs..	sprgs..	int-r-w.	ext-r-w	Lvine..
Globe		1½	1375	130	s..	34x3½	34x4	Cont..	2	6-3½x4½	25.4	6	i..		p.	s.	Dixie..	f...		cnt..	d-shft	Pierce..	3400	25	Master.	v.	s.	dd..	Dtroit.		selec	unt-m.	3	7.4		int-g.	sprgs.	sprgs.	int-r-w.	ext-r-w	Lvine..
G. M. C.	16	¼	1395	132	p..	35x5	35x5	Cont..	3	4-3½x5	22.5	4	i..		p.	s.	Eismn.	h..		suc.	motor	Mnrch	1150	20	Marvel.	g.	s.	dd..	G.M.C.	G.M.C.	selec	amid..	3	6.0	WMott	bevel..	rad-rd.	sprgs..	int-r-w.	ext-r-w	Jacox..
G. M. C.	21	1	1950	136	s..	34x3½	34x5	Cont..	3	4-3½x5	22.5	4	i..		p.	s.	Eismn.	h..		suc.	motor	Mnrch	1380	18	Marvel	g.	s.	dd.	G.M.C.	G.M.C.	selec	unt-m	3	7.7	Timkn	worm	rad-rd.	sprgs..	int-r-w.	int-r-w.	Lvine..
G. M. C.	31	1½	2350	144	s..	36x3½	36x5	Cont.	3	4-3½x5	22.5	4	i..		p.	s.	Eismn.	h..		suc.	motor	Mnrch	1150	15	Marvel.	g.	s.	dd..	G.M.C.	G.M.C.	selec	unt-m	4	9.2	TDB.	worm	rad-rd.	sprgs..	int-r-w	int-r-w.	Lvine..
G. M. C.	41	2	2690	158	s..	36x4	36x4d	Cont..	3	4-4½x5½	27.2	4	i..		p.	s.	Eismn.	h..		suc.	motor	Mnrch	1200	14	Marvel	g.	s.	dd..	G.M.C.	G.M.C.	selec	unt-m	4	9.2	TDB..	worm	rad-rd.	sprgs..	int-r-w.	int-r-w.	Lvine..
G. M. C.	71	3½	3150	163	s..	36x5	40x5d	Cont..	3	4-4½x5½	32.4	2	i..		p.	s.	Eismn.	h..		suc.	motor	Mnrch	1250	12	Marvel	g.	s.	dd..	G.M.C.	G.M.C.	selec	amid..	4	12.0	TDB..	worm	rad-rd.	sprgs..	int-r-w.	int-r-w.	Lvine..
G. M. C.	101	5	4350	163	s..	36x6	40x6d	Cont..	3	4-4½x5½	32.4	2	i..		p.	s.	Eismn.	h..		suc.	motor	Mnrch	1250	10	Marvel	g.	s.	dd..	G.M.C.	G.M.C.	selec	amid..	4	13.6	TDB..	worm	rad-rd.	sprgs..	int-r-w.	int-r-w.	Lvine..
Gramm-Bernstein		1	1900	124	s..	34x3½	34x4	Wauk	3	4-3½x5½	22.5	4	i..		p.	s.	Eismn.	h..	s, l* West.	cnt..	motor	Wauk..	1200	20	Zenith.	g.	s.	dd..	own....	own ..	id-c	amid.	3	6.5	Shldn..	worm	sprgs..	sprgs..	int-r-w.	int-r-w.	Ross ..
Gramm-Bernstein		1½	2300	130	s..	34x3½	36x4	Wauk	3	4-3½x5½	22.5	4	i..		p.	s.	Eismn.	h..	s, l* West.	cnt..	motor	Wauk..	1200	17	Zenith.	g.	s.	dd..	own ..	own...	id-c	amid.	3	7.7	Shldn..	worm	sprgs.	sprgs.	int-r-w.	ext-r-w	Ross...
Gramm-Bernstein		2	2600	146	s..	34x4	34x3½d	Wauk	3	4-3½x5½	22.5	4	i..		p.	s.	Eismn.	h..	s, l* West.	cnt..	motor	Wauk..	1200	16	Zenith.	g.	s.	dd..	own....	own...	id-c	amid.	3	8.6	Shldn..	worm	sprgs.	sprgs.	int-r-w.	ext-r-w	Ross...
Gramm-Bernstein		2½	3150	156	s..	36x4	36x4d	Wauk	3	4-4½x5½	29.0	2	i..		p.	d.	Eismn.	h..	s, l* West.	cnt..	motor	Wauk..	1150	16	Zenith.	g.	s.	dd..	own....	own...	id-c	amid.	3	7.7	Sheldn.	worm	sprgs.	sprgs.	int-r-w.	ext-r-w	Ross...
Gramm-Bernstein		3½	3800	158	s..	36x5	40x5d	Wauk	3	4-4½x5½	32.5	2	i..		p.	d.	Eismn.	h..	s, l* West.	cnt..	motor	Wauk..	1100	16	Zenith.	g.	s.	dd..	own....	own...	id-c	amid.	4	8.7	Shldn..	worm	sprgs.	sprgs.	int-r-w.	int-r-w.	Ross...
Gramm-Bernstein		5	4700	168	s..	36x6	40x6d	Wauk	3	4-4½x6½	35.7	2	i..		p.	d.	Eismn.	h..	s, l* West.	cnt..	motor	Wauk..	1050	12	Zenith.	g.	s.	c....	own....	own...	id-c	amid.	4	9.5	Shldn..	worm	sprgs.	sprgs.	int-r-w.	int-r-w.	Ross...
Gramm-Bernstein		6	4700	168	s..	36x6	40x7d	Wauk	3	4-4½x6½	35.7	2	i..		p.	d.	Eismn.	h..	s, l* West.	cnt..	motor	Wauk..	1050	12	Zenith.	g.	s.	c....	own....	own...	id-c	amid.	4	9.5	Shldn..	worm	sprgs.	sprgs.	int-r-w.	int-r-w.	Ross...
Hahn		¼	1100	120	s..	36x2	36x3½	Cont..	3	4-3½x5	14.4	4	i..		p.	s.	Eismn.	h..		cnt..	motor	Pierce.	1175	18	Stmbg.	g.	s.	dd..	B-Lipe.	B-Lipe.	selec	unt-m.	3	7.0	Torbn..	worm	sprgs.	sprgs.	int-r-w.	ext-r-w	Lvine..
Hahn		1½	1950	144	s..	36x3½	36x3½d	Cont..		4-4½x5½	27.2						Bosch.	h..		cnt..	motor	Pierce.	980	15	Stmbg.	g.	s.	dd..	B-Lipe.	B-Lipe.	selec	unt-m	3	7.0	Timkn	worm	rad-rd.	t-arm			Ross...
Hahn		3½	2900	148	s..	36x5	36x5d	Cont..		4-4½x5½	32.4																	B-Lipe.	B-Lipe.					Timkn						Ross...
Hall		2	2350	132	s..	36x4	36x4d	.....	3	4-4½x5½	27.2	4	i..		p.	s.	Bosch*	f...	l Bosch...	suc..	motor	Mnrch	1250	20	Zenith.	g.	s.	dd..	.....	.....	selec	unt-m.	3	9.2	.....	worm	sprgs.	sprgs.	int-r-w.	int-r-w.	.....
Hall		3½	3300	144	s..	36x5	36x5d	.....	3	4-4½x5½	32.4	2	i..		p.	s.	Bosch*	f...	l Bosch...	suc*	motor	Mnrch*	1200	15	Zenith.	g.	s.	dd..	.....	.....	selec	unt-m.	3	10.5	.....	worm*	sprgs*	sprgs*	int-r-w.	int-r-w.	.....
Hall		5	4200	144	s..	36x5	40x6d	Cont..	3	4-4½x5½	32.4	2	i..		p.	s.	Bosch*	f...	l Bosch...	suc*	motor	Mnrch*	1200	12	Zenith.	g.		dd..	B-Lipe.	B-Lipe.	selec	unt-m.	4	12.0	.....	d-chn worm	rad-rd.	.....	int-r-w.	ext-j.s.	.....
Harrison	C	3½	.....	.....	s..	37x5	36x7	Cont..	3	4-4½x5	32.4	2	i..		p.	d.	Bosch.	h..		cnt..	motor	own....	1025	12	Schblr.	g.	s.	c....	own...	Rochtr.	selec	unt-j..	3	9.4	own ...	d-chn	rad-rd	.....	int-r-w.	ext-r-w	own ...
Harrison	F	3½	.....	.....	s..	37x5	37x5d	Cont..	3	4-4½x5	32.4	2	i..		p.	d.	Bosch.	h..		cnt..	motor	own....	1000	12	Stmbg.	g.	s.	c....	own ..	B-Lipe.	selec	unt-j..	3	9.6	Timkn.	d-chn	rad-rd	.....	int.....	ext....	Ross...
Harvey	WFA	2½	2500	150	s..	36x4	36x7	Buda.	3	4-4½x5½	29.0	4	i..		p.	s.	Eismn.	a.	s, l West..	cnt..	duplx	Duplex.	1000	16	Stmbg.	g.	s.	dp.	B&Bek.	B-Lipe.	selec	amid..	4	7.7	Shldn..	worm	sprgs.	sprgs..	int-r-w.	int-r-w.	Ross...
Harvey	WHA	3½	3250	160	s..	36x5	36x5d	Buda	3	4-4½x6	29.0	4	i..		p.	s.	Eismn.	a.	s, l West..	cnt..	duplx	Duplex.	1000	13	Stmbg.	g.	s.	dp.	B&Bek.	B-Lipe.	selec	amid..	4	8.7	Shldn..	worm	sprgs.	sprgs..	int-r-w.	int-r-w.	Ross...
Harvey	WKA	5	4000	160	s..	36x6	40x6d	Buda	3	4-4½x6	32.4	4	i..		p.	s.	Eismn.	a.	s, l West.	cnt..	duplx	Duplex.	900	11	Stmbg.	g.	s.	dp.	B&Bek.	B-Lipe.	selec	amid..	4	8.7	Shldn..	worm	sprgs.	sprgs..	int-r-w.	int-r-w.	Ross...
Harvey	HT	7	4000	125	s..	36x5	36x5d	Buda..	3	4-4½x6	32.4	4	i..		p.	s.	Eismn.	a.					1000	11	Stmbg.	g.	s.	dp.	B&Bek.	B-Lipe.	selec	amid..	4	8.7	Shldn..	worm	sprgs.	sprgs.	int-r-w.	int-r-w.	Ross...
Hawkeye	H	1½	1750	136	s..	34x3½	34x5	Buda		4-3½x5½	22.5	4	i..		t.	s.	Eismn.	h..					1500	15	Master	v.		dp..			selec	unt-m.	3	7		int-g.	sprgs.	sprgs.	int-r-w.	ext-r-w	.....
Higrade		¼	1700	115	p..	34x4½	34x4½	Wis..	3	4-3½x5	16.9	4	i..		p							Smplx		20	Zenith.	g.	s.	p.	B&Bek.	Cotta	id-cl	unit-m	3	4.56	Sdhln..	worm	sprgs.	sprgs.	int-r-w.	ext-r-w	Lvine..
Horner		1½	2600	145	s..	36x4	36x4	.....	3	4-4½x5½	27.2	4			p	d	.....	h..		cnt..	motor	.....			.....	g.	s.	dd..	B-Lipe.	B-Lipe.	selec	.....	3	.....	.....	worm	rad-rd	.....	int-r-w.	int-r-w.	Ross ..
Horner		2	2750	145	s..	36x4	36x3½d	.....	3	4-4½x5½	27.2	4			p	d	.....	h..		cnt..	motor	.....			.....	g.	s.	dd..	B-Lipe.	B-Lipe.	selec	.....	3	.....	.....	worm	rad-rd.	sprgs..	int-r-w.	int-r-w.	Ross...
Horner		3	3550	145	s..	36x5	40x4d	Cont..	3	4-4½x5½	32.4	2	t..		p	d	.....	h..		cnt..	motor	.....			.....	g.		dd..	B-Lipe.	B-Lipe.	selec	.....	3	9.4	own....	worm	rad-rd.	sprgs.	int-r-w.	int-r-w	Ross...
Horner		5	4750	156	s..	38x6	42x6d	Cont..	3	4-5½x5½	44.2	2	t..		p	d	.....	h..		cnt..	motor	.....			.....	g.	s.	dd..	B-Lipe.	B-Lipe.	selec	amid.	3	13.4	own....	worm	rad-rd.	sprgs.	int-r-w.	int-r-w	Ross...
Hoover		¼		120	p..	32x4	33x4½	Cont	3	4-3½x5	19.6	4			t.		Dixie.	h..					25	.....	v.	c	d..	Fuller.	B-Lipe.	selec	unt-m.	3	6.2	.....	worm	sprgs.	sprgs.	int-r-w.	int-r-w.	.....
Hurlburt		1½	2350	136	s..	34x4	34x5	.....	3	4-3½x5½	22.5	4	i..		p.	s.	.....	l..	l Vesta..	cnt..	motor	.....	1200	18	.....	g.	s.	dd..	.....	.....	selec	unt-m	3	7.7	.....	worm	sprgs.	sprgs.	int-r-w.	int-r-w.	.....
Hurlburt		2	3300	148	s..	36x4	36x4d	.....	3	4-4½x5½	27.2	4	i..		p.	d.	Dixie.	l..	l Vesta..	cnt..	motor	Pierce.	1200	16	Shkspr	g.	s.	c....	.....	.....	selec	unt-m.	3	8.6	.....	worm	rad-rd,	t-arm	int-r-w.	ext-r-w	.....
Hurlburt		3½	3850	146	s..	36x5	36x5d	.....	4	4-4½x6	29.0	4	i..		p.	d.	Dixie.	l..	l Vesta..	cnt..	motor	Pierce.	1200	13	Shkspr	g.	s.	c....	.....	.....	selec	unt-m.	3	8.6	.....	worm	rad-rd,	t-arm	int.....	ext.....	.....
Hurlburt		5	4600	156	s..	36x5	38x6d	.....	4	6-3½x5½	33.8	6	i..		p.	d.	Dixie.	l..	l Vesta..	cnt..	motor	Pierce.	1200	12	Shkspr	g.	s.	dd..	.....	.....	selec	amid..	4	10.3	.....	worm	rad-rd.	t-arm	int-r-w.	int-r-w	.....
Hurlburt		7	5500	156	s..	36x6	40x7d	.....	3	6-3½x5½	33.8	6	i..		p.	d.	Dixie.	l..	l Vesta..	cnt..	motor	Pierce..	1200	12	Shkspr	g.	s.	dd..	.....	.....	selec	amid..	4	11.3	.....	worm	rad-rd.	t-arm	int-r-w.	ext-sht	.....
Independent	F	1	1385	128	s*..	36x3*	36x4*	Cont..	3	4-3½x5	19.6	4			p.	s.	Eismn.	f...	s, l Jesco	suc.	motor	Mnrch	1350		Marvel.	g.	s.	dd..	B-Lipe.	B-Lipe.	selec	unt-m.	3	.....	.....	worm	sprgs.	sprgs.	int-r-w.	int-r-w.	Lvine..
Independent	G	2	1850	144	s..	36x3½	36x5	Cont..		4-4½x5½	27.2	4			p.	s.	Eismn.	f...		suc.	motor	Mnrch			Marvel.	g.	s.	dd..			selec	unt-m.	3	.....	.....	worm	sprgs.	sprgs.	int-r-w.	int-r-w.	.....
Indiana		1	1550	135	s..	34x3½	34x4	Wauk..		4-3½x5½	19.6	4	i..		p.	s.	Eismn.	s.		cnt..	motor	Wauk..	1400	20	Stmbg.	g.	s.	p.	B&Bek.	own...	selc	amid..	3	7	own ..	worm	sprgs.	sprgs.	int-r-w.	int-r-w.	Lvine..
Indiana		2	2250	150	s..	36x4	36x7	Rutbr.		4-4½x5½	27.2	2	i..		p.	s.	Bosch.	s.		cnt..	motor	Pierce.	1100	15	Stmbg.	g.	s.	p.	B&Bek.	.....	selec	amid	3	7.7	Shldn	worm	rad-rd	sprgs.	int-r-w	int r-w	Lvine..
Indiana		3½	3000	156	s..	36x5	36x5d	Wauk.		4-4½x5½	29.0	2	i..		p.	s.	Bosch.	s.		cnt..	motor	Wauk..	1160	12	Stmbg.	g.	s.	p.	B&Bek.	.....	selec	amid	4	10.3	Shldn	worm	rad-rd.	sprgs.	int-r-w	int-r-w.	Lvine..
Indiana		5	4000	167	s..	36x5	36x6d	Wauk.	3	4-4½x6½	41.6	2	t..		p.	dx	Bosch.	s.		cnt..	motor	Wauk..	800	11	Stmbg.	g.	s.	p.	B&Bek.	own...	selec	amid..	4	8.7	Shldn	worm	ra i-rd	sprgs.	int-r-w	int-r-w	Lvine..
I.H.C.	H	¾	1450	115	s..	36x3	36x3½	own...	3	4-3½x5½	19.6	4	i..		p	s.	Bosch.	h..	s,l* N-East	cnt..	motor	own....	1275*	18*	Holley.	g.		c....	own...	own....	selec	amid..	3	7.0	own....	int-g..	sprgs.	sprgs.	int-r-w.	int-r-w	Ross...
I.H.C.	F	1	1750	128	s..	36x3½	36x4	own...	3	4-3½x5½	19.6	4	i..		p.	s.	Bosch.	h..	s,l* N-Fast	cnt..	motor	own....	1300	17	Holley.	g.		c....	own...	own....	selec	amid..	3	8.0	own....	int-g.	sprgs.	sprgs.	int-r-w.	int-r-w	Ross...
Kelly-Springfield	K-31	1½	2500	144	s*..	36x3½*	36x6*	own...	3	4-3½x5½	22.5	4	i..		p.	s.	Eismn.	a.	s, l R&M*	cnt..	motor	own....	1200	15	Rayfld	g.	s.	c....	own...	Covert	selec	amid..	3	....	.....	d-chn	rad-rd.	.....	int-r-w.	int-r-w	Jemr..
Kelly-Springfield	K-32	1½	2500	144	s*..	36x3½*	36x6*	own...	3	4-3½x5½	22.5	4	i..		p.	s.	Eismn.	a.	s, l R&M*	cnt..	motor	own....	1200	15	Rayfld	g.	s.	c....	own...	Covert	selec	amid..	3	....	own....	worm	rad-rd.	sprgs.	int-r-w.	int-r-w	Jemr..
Kelly-Springfield	K-36	2½	3000	144	s*..	36x4*	36x4d*	own...	3	4-3½x5½	22.5	4	i..		p.	s.	Eismn.	a.	s, l R&M*	cnt..	motor	own....	1200	11	Rayfld	g.	s.	c....	own...	Covert	selec	amid..	3	....	own....	worm	rad-rd.	sprgs.	int-r-w	int-r-w	Jemr..
Kelly-Springfield	K-35	2½	3000	144	s*..	36x4*	36x4d*	own...	3	4-3½x5½	22.5	4	i..		p.	s.	Eismn.	a.	s, l R&M*	cnt..	motor	own....	1200	11½	Rayfld	g.	s.	c....	own...	Covert	selec	amid..	3	....	.....	d-chn	rad-rd.	.....	int-r-w.	int-r-w	Jemr..
Kelly-Springfield	K-40	3½	3850	150	s*..	38x5*	38x5d*	own...	3	4-4½x6½	32.4	2	t..		p.	s.	Eismn.	a.	s, l R&M*	cnt..	motor	own....	1100	12	Rayfld	g.	s.	c....	own...	Covert	selec	amid.	3	....	.....	d-chn	rad-rd.	.....	int-r-w.	int-r-w.	Jemr..
Kelly-Springfield	K-45	4	4000	150	s*..	38x5*	40x6d*	own...	3	4-4½x6½	32.4	2	t..		p.	s.	Eismn.	a.	s, l R&M*	cnt..	motor	own....	1100	12	Rayfld	g.	s.	c....	own...	Covert	selec	amid.	3	....	.....	d-chn	rad-rd.	.....	int-r-w.	int-r-w.	Jemr..
Kelly-Springfield	K-50	5	4600	150	s*..	38x6*	40x6d*	own...	3	4-4½x6½	32.4	2	t..		p.	s.	Eismn.	a.	s, l R&M*	cnt..	motor	own....	1100	10¾	Rayfld	g.	s.	c....	own...	Covert	selec	amid.	3	....	.....	d-chn	rad-rd.	.....	int-r-w.	int-r-w.	Jemr..
Kelly-Springfield	K-60	6	4750	150	s*..	38x6*	40x7d*	own...	3	4-4½x6½	32.4	2	t..		p.	s.	Eismn.	a.	s, l R&M*	cnt..	motor	own....	1100	10¼	Rayfld	g.	s.	c....	own...	Covert	selec	amid.	3	....	.....	d-chn	rad-rd.	.....	int-r-w.	int-r-w.	Jemr..
King		3½	2600	120	s..	36x5	36x5d	Cont.	3	4-4½x5½	32.4	4	i..		p.	d	Bosch.	2		cnt..	motor	Pierce.	1000	12	Schblh.	g.	s.	dd.	own....	Cotta	id-c	unt-j..	3	8.6	Timkn	d-chn	rad-rd.	.....	int-r-w.	ext-j...	Toss...
KisselKar	Flyer	¼	1185	135	p..	32x4	32x4	own...	3	4-3½x5½	24.0	4	i..		p.		Eismn.	h..	s,l*	cnt..	motor.	Pierce.	1000	22	Stmbg.	v.	s.	c....	Warner	Warner	selec	unt-m.	3	4.58	own....	Sp.b..	sprgs..	sprgs.	ext-r-w.	ext-r-w.	Jacox..
KisselKar. Gen.	Utility	1½	1585	152	s..	34x3	34x5	own...	3	4-3½x5½	24.0	4	i..		p.		Eismn.	h..	s,l*	cnt..	motor.	Pierce.	1100	17	Stmbg.	v.	s.	dp..	Warner	Warner	selec	unt-m.	3	6.5	Shldn..	worm	sprgs..	sprgs.	int-r-w.	int-r-w.	Jacox..
KisselKar	Freighter	2	2275	168	s..	34x4	36x7	own...	3	4-4½x5½	28.9	4	i..		p.		Eismn.	h..	s,l*	cnt..	motor	Pierce.	1190	15	Stmbg.	v.	s.	dp..	B&Beks	Muncie	selec	unt-m.	4	8.5	Timkn	worm	sprgs..	sprgs.	int-r-w.	int-r-w.	Lvine..
KisselKar. Heavy	Duty	3½	3150	168	s..	36x5	36x5d	own..	3	4-4½x5½	28.9	4	i..		p.		Eismn.	h..	s,l*	cnt..	motor	Pierce.	1245	13	Stmbg.	v.	s.	dp..	Warner	Warner	selec	unt-m.	4	10.3	Shldn..	worm	sprgs..	sprgs.	int-r-w.	int-r-w.	Ross...
Kleiber	AA	1	1950	130	s*..	34x3*	34x5*	Cont..	3	4-3½x5	22.5	4	i..		p.	d.	Bosch.	h..	l	cnt..	motor	Pierce.	1300	20	Schblr	g.	s.	c....	B-Lipe.	B-Lipe.	selec	unt-m.	3	6.7	.....	worm	sprgs.	sprgs.	int.....	int.....	Toss...
Kleiber	A	1½	2350	140	s..	36x2½	36x5*	Cont..		4-4½x5½	27.2	4	i..		p.	d.	Bosch.	h..	l	cnt..	motor	Pierce.	1250	18	Schblr.	g.	s.	d..	HShaw	B-Lipe.	selec	amid.	3	6.5	.....	worm	sprgs.	sprgs.	int.....	ext.....	Ross...
Kleiber	BB	2	2600	145	s..	36x3½*	36x6*	Cont..	3	4-4½x5½	27.2	4	i..		p.	d.	Bosch.	h..	l	cnt..	motor	Pierce.	1225	17	Schblr.	g.	s.	d..	HShaw	B-Lipe.	selec	amid.	3	7.7	.....	worm	....	sprgs.	int.....	ext....	Ross...
Kleiber	B	2½	2850	150	s..	36x4	36x4d	Cont..	3	4-4½x5½	27.2	4	i..		p.	d.	Bosch.	h..	l	cnt..	motor	Pierce.	1200	16	Schblr.	g.	s.	d..	HShaw	B-Lipe.	selec	amid.	3	8.6	Shldn..	worm	sprgs.	sprgs.	int.....	ext.....	Ross...
Kleiber	C	3½	3650	160	s..	36x5	36x5d	Cont..	3	4-4½x5½	32.4	2	i..		p.	d.	Bosch.	h..	l	cnt..	motor	Pierce.	1150	14	Schblr.	g.	s.	d..	HShaw	B-Lipe.	selec	amid.	3	8.7	.....	worm	sprgs.	sprgs.	int.....	int.....	Ross...
Kleiber	D	5	4600	170	s..	36x6	40x6d	Cont..	3	4-5½x5½	44.2	2	t..		p.	d.	Bosch.	h..	l	cnt..	motor	Pierce.	1100	12	Schblr.	g.	s.	d..	HShaw	B-Lipe.	selec	amid.	4	8.7	Shldn..	worm	sprgs.	sprgs.	int.....	int.....	Ross...

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TRUCKS—Continued

Name and Model	Tons Capacity	Price of Chassis	Wheelbase in Inches	TIRES			MOTOR																				TRANSMISSION									BRAKES		
				Kind	Sizes in Ins. Front	Sizes in Ins. Rear	Make Engine	No. of Crankshaft Bearings	Bore and Stroke	S.A.E. Hp.	Cylinders Cast	Valves Placed	Spark Plug	Cooling—Water Circulation	IGNITION True	IGNITION Make	IGNITION Spark Advance	Electric System—Type and Make	GOVERNOR Type	GOVERNOR Drive	GOVERNOR Make	SPEED Motor in r.p.m.	SPEED Truck in m.p.h.	FUEL SYS. Carbureter Make	FUEL SYS. Fuel Feed	FUEL SYS. Tank Location	CLUTCH Type	CLUTCH Make	GEARSET Make	GEARSET Type	GEARSET Location	GEARSET Speeds	Total Gear Reduction in High	Rear Axle	Final Drive	Propulsion Taken By	Torque Taken By	Hand	Foot	Steering Gear
Packard	1-D	1	2450	126*	s.	34x3½	34x6	own	4	4-4x5½	25.6	4	l.	p.	d.	Dixie	h.	s, l Bijur	cnt.	motor	own	1000	16	own	p	s.	dd.	own	own	selec	amid.	4	6.25	own	worm	rad-rd.	t-arm	int-r-w.	ext-sht.	own
Packard	1½-D	1½	2800	126*	s.	34x3½	34x3½d	own	4	4-4x5½	25.6	4	l.	p.	d.	Dixie	h.	s, l Bijur	cnt.	motor	own	1000	16	own	p	s.	dd.	own	own	selec	amid.	4	6.25	own	worm	rad-rd.	t-arm	int-r-w.	ext-sht.	own
Packard	2-D	2	3200	144*	s.	34x4	34x4d	own	4	4-4x5½	25.6	4	l.	p.	d.	Dixie	h.	s, l Bijur	cnt.	motor	own	1000	14	own	p	s.	dd.	own	own	selec	amid.	4	7.25	own	worm	rad-rd.	t-arm	int-r-w.	ext-sht.	own
Packard	3-D	3	3900	156*	s.	36x5	36x5d	own	4	4-4½x5½	32.4	4	l.	p.	d.	Dixie	h.	s, l Bijur	cnt.	motor	own	1000	12	own	p	s.	dd.	own	own	selec	amid.	4	9.0	own	worm	rad-rd.	t-arm	int-r-w.	ext-sht.	own
Packard	4-D	4	4375	156*	s.	36x5	40x5d	own	4	4-4½x5½	32.4	4	l.	p.	d.	Dixie	h.	s, l Bijur	cnt.	motor	own	1000	12	own	p	s.	dd.	own	own	selec	amid.	4	10.0	own	worm	rad-rd.	t-arm	int-r-w.	ext-sht.	own
Packard		5	4900	....	s.	.....	.....	Sterl	..	4-5 x5½	40.0	4	l.	p.	d.	Dixie	h.	s, l Bijur	cnt.	motor	own	1000	11	own	p	s.	dd.	own	own	selec	amid.	4	10.7	own	worm	rad-rd.	t-arm	int-r-w.	ext-sht.	own
Packard		6	5100	....	....	.....	.....	.....	..	4-5x5½	40.0	4	l.	p.	d.	.....	h.	s, l Bijur	cnt.	motor	own	1000	11	own	p	s.	dd.	own	own	selec	amid.	4	10.7	own	worm	rad-rd.	t-arm	int-r-w.	ext-sht.	own
Packet		1/16	300	100	p.	28x3	28x3	Prugh	2	4-2½x4	12.1	4	l.	..	t.	s.	A.Kent	a.	.....	.....	.....	none	1500	25	Carter	g.	d.	....	own	own	frie.	unt-j.	3	4.2	own	d-chn.	rad-rd.	.....	int-r-w.	int-r-w.	own
Palmer		1	1685	132½	s.	34x3½	34x4	Cont.	3	4-3½x5	22.5	4	l.	..	t.	s.	Bosch	f.	.....	.....	.....	none	.....	18	Stmbg.	g.	s.	dd.	Fuller	Fuller	selec	unt-m.	3	....	Torbn.	int-g.	sprgs.	sprgs.	int-r-w.	ext-r-w	Ross
Palmer		2	2295	144	s.	36x3½	36x3½d	Cont.	3	4-4½x5½	27.2	4	l.	..	p.	s.	Bosch	f.	.....	cnt.	motor	Pierce	1000	15	Stmbg.	g.	s.	dd.	Fuller	Fuller	selec	unt-m.	3	7.7	Timkn	worm	rad-rd.	sprgs.	int-r-w.	int-r-w.	Ross
Palmer-Moore	K	¾	1150	106	s.	36x3	36x3½	Buda	3	4-3½x5½	19.6	4	l.	..	t.	s.	Bosch	a.	s, l* opt	suc.	motor	Mnrch	1275	20	Zenith	g.	s.	dd.	B&Bek	Warner	selec	amid.	3	6.8	Clfor	int-g.	sprgs.	t-arm	int-r-w.	ext-r-w	Ross
Palmer-Moore	M	1	1500	126	s.	36x3½	36x4	Buda	3	4-3½x5½	22.5	4	l.	..	t.	s.	Bosch	a.	s, l* opt	suc.	motor	Mnrch	1150	18	Zenith	g.	s.	dd.	B&Bek	Warner	selec	amid.	3	6.8	Clfor	int-g.	sprgs.	t-arm	int-r-w.	ext-r-w	Ross
Peerless	TC2	2	3000	145	s.	36x4	36x4d	own.	3	4-4½x6½	32.4	2	t.	m	p.	d.	Remy	h	.....	cnt.	motor	own	925	16	Stmbg.	g.	s.	c	own	B-Lipe	selec	amid.	3	6.0	own	worm	sprgs.	sprgs.	int-r-w.	int-r-w.	own
Peerless	TC3	3	3700	151*	s.	36x4	40x4d	own.	3	4-4½x6½	32.4	2	t.	m	p.	d.	Remy	h	.....	cnt.	motor	own	925	14½	Stmbg.	g.	s.	c	own	own	selec	unt-j.	4	7.4	own	d-chn	rad-rd.	rad-rd.	int-r-w.	ext-j-s.	own
Peerless	TC4	4	4000	151*	s.	36x5	40x5d	own.	3	4-4½x6½	32.4	2	t.	m	p.	d.	Remy	h	.....	cnt.	motor	own	925	12½	Stmbg.	g.	s.	c	own	own	selec	unt-j.	4	8.7	own	d-chn	rad-rd.	rad-rd.	int-r-w.	ext-j-s.	own
Peerless	TC5	5	4500	151*	s.	38x6	42x6d	own.	3	4-4½x6½	32.4	2	t.	m	p.	d.	Remy	h	.....	cnt.	motor	own	925	11	Stmbg.	g.	s.	c	own	own	selec	unt-j.	4	10.5	own	d-chn	rad-rd.	rad-rd.	int-r-w.	ext-j-s.	own
Peerless	TC6	6	5000	151*	s.	38x7	42x7d	own.	3	4-4½x6½	32.4	2	t.	m	p.	d.	Remy	h	.....	cnt.	motor	own	925	11	Stmbg.	g.	s.	c	own	own	selec	unt-j.	4	10.5	own	d-chn	rad-rd.	rad-rd.	int-r-w.	ext-j-s.	own
Pennsy		15	710	98	p.	32x3½	32x3½	LeRoi	2	4-3½x4½	18.0	4	l.	..	t.	s.	Dixie	..	.....	.....	.....	none	2200	42½	Zenith	g.	s.	dd.	Dtroit	Dtroit	selec	unt-m.	3	4.7	Timkn	bevel	sprgs.	sprgs.	int.	ext.	Ross
Pierce-Arrow		2	3300	150*	s.	36x4	36x4d	own	3	4-4x5½	25.6	2	t.	m	p.	s.	Eismn*	h.	.....	cnt.	motor	own	1050	16	own	g.	s.	c	own	own	selec	amid.	3	7.0	own	worm	rad-rd.	t-arm	int-r-w.	ext-sht.	own
Pierce-Arrow		5	5000	168*	s.	36x5	40x6d	own	3	4-4½x6	38.3	2	t.	m	p.	d.	Bosch*	h.	.....	cnt.	motor	own	950	14	own	g.	s.	c	own	own	selec	amid.	3	7.8	own	worm	rad-rd.	t-arm	int-r-w.	ext-sht.	own
Pullman	4-24	½	.....	114	p.	31x4	31x4	own	3	4-3½x4½	22.5	4	l.	..	t.	s.	Dixie	h.	s, l-2 Apple	....	.....	none	2800	35	Stmbg.	g.	d	d	own	own	selec	unt-m.	3	4.2	own	bevel	sprgs.	t-arm	int-r-w.	ext-r-w	own
Pullmore		3	3400	153	s.	36x6	36x6	Buda	..	4-4¼x6	.....	4	l.	..	t.	s.	.....	.....	.....	.....	.....	.....	1050	12	.....	.....	.....	.....	B&Bek	Warner	.....	.....	.....	9.9	.....	.....	.....	.....	.....	.....	.....
Rennoc		3½	.....	116	s.	36x5	36x7	Buda	..	4-4½x5½	27.2	4	l.	..	p.	d.	Bosch	h.	.....	cnt.	motor	Pierce	1100	18	Stmbg.	g.	s.	dd.	Fuller	Fuller	selec	unt-n.	4	..	sprgs.	.....	.....	sprgs.	int-r-w.	int-r-w.	.....
Rainier		½	995	115	p.	33x4	33x4	.....	2	4-3½x4½	16.9	4	l.	..	t.	s.	Dixie	h.	s, l Splitd	.....	.....	none	2000	34	Zenith	v.	s.	dp	.....	.....	selec	unt-m.	3	5.8	.....	worm	sprgs.	sprgs.	int-r-w.	int-r-w.	Lvine
Reo	F	¾	1050	128	p.	34x4½	34x4½	own	3	4-4½x4½	27.2	2	il	..	p.	s.	Remy	h.	s, l Remy	.....	.....	none	.....	....	Johns	g.	d.	dd	own	own	selec	amid.	3	4.3	own	sp-bv	sprgs.	t-arm	none	2 s-r-w.	own
Reo	J	2	1800	146	s.	36x4	36x3½d	own	3	4-4½x4½	27.2	2	il	..	p.	d.	Natl	h.	.....	.....	.....	hyd	1250	14	Johns	g.	s.	dd	own	own	selec	amid.	3	8.7	own	d-chn	rad-rd.	.....	ext-r-w	ext-j-s.	own
Republic	Dispatch	¾	835	110	ps.	32x3	32x3½	own	2	4-3½x5	16.9	4	l.	..	t.	s.	Bosch	f.	l Bosch	suc.	motor	Ruggles	1050	20	.....	g.	d.	dd	Covert	Covert	selec	unt-m.	3	5.3	Torbn.	int-g.	sprgs.	sprgs.	ext-sht.	ext-r-w	Jacox
Republic	Special	¾	895	128	s.	32x3	32-4	own	2	4-3½x5	16.9	4	l.	..	t.	s.	Eismn	f.	s, l Eismn	suc.	motor	Ruggles	1100	20	.....	g.	s.	dd	Covert	Covert	selec	unt-m.	3	6.6	Torbn	int-g.	sprgs.	sprgs.	ext-sht.	ext-r-w	Jacox
Republic	10	1	1135	124	s.	34x3	34x4	Cont.	3	4-3½x5	19.6	4	l.	..	t.	s.	Bosch	f.	s, l Bosch	suc.	motor	Ruggles	1050	15	Stmbg.	g.	s.	dd	Fuller	Fuller	selec	unt-m.	3	7.0	Torbn.	int-g.	sprgs.	sprgs.	int-r-w.	ext-r-w	Jacox
Republic	11	1½	1450	144	s.	34x3½	34x5	Cont.	3	4-3½x5	22.5	4	l.	..	t.	s.	Bosch	f.	s, l Bosch	suc.	motor	Ruggles	1200	15	Stmbg.	g.	s.	dd	Fuller	Fuller	selec	unt-m.	3	7.0	Torbn.	int-g.	sprgs.	sprgs.	int-r-w.	ext-r-w	Jacox
Republic	12	2	1885	144*	s.	34x4	34x6	Buda	3	4-4½x5½	27.2	4	l.	..	p.	s.	Bosch	f.	s, l Bosch	suc.	motor	Ruggles	950	12	Stmbg.	g.	s.	dd	Fuller	Fuller	selec	unt-m.	3	8.0	Torbn.	int-g.	sprgs.	sprgs.	int-r-w.	ext-r-w	Jacox
Republic	T	3½	2750	165*	s.	36x5	36x5d	Buda	3	4-4½x5½	29.0	4	l.	..	p.	s.	Bosch	h.	s, l Bosch	suc.	motor	Ruggles	1025	10	Stmbg.	g.	s.	dd	Muncie	Muncie	selec	unt-m.	4	10.0	Clfor	int-g.	sprgs.	sprgs.	int-r-w.	ext-sht.	Ross
Reya		1	995	117	p.	31x4	31x4	GB&S	..	4-3½x4½	27.5	4	l.	..	t.	s.	Dixie	h.	s, l Dynto	....	.....	.....	.....	..	Schblr	g.	s.	d	.....	.....	selec	unt-m.	3	4.7	Penn	bevel	sprgs.	sprgs.	int-r-w.	ext-r-w.	Penn
Riker		3	.....	150*	s.	36x5	36x5d	own	5	4-4¼x6	29.0	2	t.	..	p.	d	Brlng	h.	s, l West	cnt.	motor	own	1180*	14½	own	g.	s.	c	own	own	selec	amid.	4	10.0	own	worm	rad-rd.	t-arm	int-r-w.	ext-sht.	Ross
Riker		4	.....	150*	s.	36x5	36x6d	own	3	4-4¼x6	29.0	2	t.	..	p.	d	Brlng	h.	s, l West	cnt.	motor	own	1350*	14½	own	g.	s.	c	own	own	selec	amid.	4	10.0	own	worm	rad-rd.	t-arm	int-r-w.	int-r-w.	Ross
Royal		1	.....	124*	s.	34x4	34x5	Wis.	3	4-3½x5	16.9	4	l.	..	p.	s.	Bosch	f.	.....	suc.	motor	Mnrch	1600*	25*	Master	g.	s.	dp	.....	.....	id-e	amid.	3	....	Shldn. Timkn	worm	sprgs.	sprgs.	int-r-w.	int-r-w.	Ross
Royal		2½	.....	132*	s.	36x4½	36x6	Wis.	3	4-4x6	25.6	4	l.	..	p.	s.	Bosch	f.	.....	suc.	motor	Mnrch	1600	18	Master	g.	s.	dp	.....	.....	id-e	amid.	3	....	Shldn. Timkn	worm	sprgs.	sprgs.	int-r-w.	int-r-w.	Ross
Royal		3½	.....	158*	s.	36x5	38x5d	Wis.	3	4-4¼x6	29.0	4	l.	..	p.	s.	Bosch	f.	.....	suc.	motor	Mnrch	1600	15	Master	g.	s.	dp	.....	.....	id-e	amid.	3	....	Shldn. Timkn	worm	sprgs.	sprgs.	int-r-w.	int-r-w.	Ross
Royal		5	.....	168*	s.	36x6	40x6d	Wis.	3	4-4¾x5½	36.2	2	t.	..	p.	s.	Bosch	f.	.....	suc.	motor	Mnrch	900*	10*	Master	g.	s.	d	.....	.....	id-e	amid.	3	....	Shldn. Timkn	worm	sprgs.	sprgs.	int-r-w.	int-r-w.	Ross
Royal		6	.....	158*	s.	36x6	40x6d	Wis.	3	4-5⅛*x6*	*42.2	2	t.	..	p.	s.	Bosch	f.	.....	suc.	motor	Mnrch	900*	10*	Master	g.	s.	d	.....	.....	id-e	amid.	3	....	Shldn. Timkn	worm*	sprgs*	sprgs*.	int-r-w.	int-r-w.	Ross
Royal		7	.....	158*	s.	36x7	40x7d	Wis.	3	4-5½x7	44.2	2	t.	..	p.	s.	Bosch	f.	.....	suc.	motor	Mnrch	900*	10*	Master	g.	s.	d	.....	.....	id-e	amid.	3	....	Shldn. Timkn	d-chn.	rad-rd.	.....	int-r-w.	int-r-w.	Ross
Rush	D	½	895	105	p.	31x4	31x4	Lvcmg	2	4-3½x5	16.9	4	l.	..	t.	s.	Conn	h.	s, l Splitd	.....	.....	.....	1600	29	Carter	g.	s.	d	B&Bek	.....	selec	unt-m.	3	.5	own	bevel	sprgs.	tor-t.	int-r-w.	ext-r-w	Lvine
Sanford	R	1½	1370	138	s*	36x3½*	36x4*	Buda	3	4-3½x5½	19.6	4	l.	..	t.	s.	Bosch	f.	.....	cnt.	motor	Pierce	1150	14	Schblr	g.	s.	dd	B-Lipe	B-Lipe	selec	unt-m.	3	7.0	Clark	int-g.	sprgs.	sprgs.	int-r-w.	ext-r-w	.....
Sanford	S	2	2100	165*	s.	36x4	36x7	Cont.	3	4-4½x5½	29.0	4	l.	..	p.	s.	Bosch	f.	.....	cnt.	motor	Pierce	1175	14	Schblr	g.	s.	dd	B-Lipe	B-Lipe	selec	unt-m.	3	9.0	Clark	int-g.	sprgs.	sprgs.	int-r-w.	ext-r-w	.....
Sanford	W35	3½	2800	156	s.	36x4	36x4d	Cont.	3	4-4¼x6	32.4	4	l.	..	p.	s.	Bosch	f.	.....	cnt.	motor	Pierce	1000	12	Stmbg.	g.	s.	dp	B&Bek	Warner	selec	amid.	4	7.75	Shldn	worm	sprgs.	sprgs.	int-r-w.	int-r-w.	.....
Sanford	W25	2½	3600	174	s.	36x5	36x5d	Buda	3	4-4¼x5½	29.0	4	l.	..	p.	s.	Bosch	f.	.....	cnt.	motor	Pierce	1100	13.5	Stmbg.	..	s.	dd	B&Bek	Warner	selec	amid.	4	7.75	Shldn	worm	sprgs.	sprgs.	int-r-w.	int-r-w.	.....
Saurer	L	5	4800	153½	s.	36x5	42x5d	.....	3	4-4½x5½	34.3	2	t.	..	p.	s.	Bosch	h.	.....	cnt.	motor	own	1000	8*	own	p	r.	c	.....	.....	selec	unt-j.	4	15.8	.....	d-chn	rad-rd.	.....	int-r-w.	ext-sht.	.....
Saurer	M	6½	5800	156½	s.	36x5	42x6d	.....	3	4-4½x5½	34.3	2	t.	..	p.	s.	Bosch	h.	.....	cnt.	motor	own	1000	9½*	own	p	r.	c	.....	.....	selec	unt-j.	4	14.8	.....	d-chn	rad-rd.	.....	int-r-w.	.....	.....
Schleicher		3	3500	150*	s.	34x4½	34x3½d	Cont.	3	4-4½x5½	29.0	2	l.	..	p.	2d	Bosch	h.	.....	.....	.....	opt	1200	25	Stmbg.	g.	s.	.....	.....	own	.....	.....	.....	.....	.....	own	d-chn	rad-rd.	.....	ext-r-w	ext-sht.	.....
Schleicher		5	4500	150*	s.	34x5	34x4d	Cont.	3	4-5x6	40.0	2	l.	..	p.	2d	Bosch	h.	.....	.....	.....	.....	1200	20	Stmbg.	g.	s.	c	.....	own	selec	amid.	4	5.0	own	d-chn	rad-rd.	.....	ext-r-w	ext-sht.	.....
Selden	G	¾	1075	110	p.	32x3½	33x4	LeRoi	2	4-3½x4½	15.6	4	l.	..	t.	s.	Eismn	f.	s, l A-Cl	cnt.	motor	Milwk	1260	20	Schblr	g.	s.	dd	Covert	.....	selec	unt-m.	3	6.2	.....	worm	sprgs.	sprgs.	int-r-w.	int-r-w.	Ross
Selden	TX	1	1550	140	s.	34x3	34x4	Cont.	3	4-3½x5	19.6	4	l.	..	t.	s.	Bosch	f.	s, l-*N-East	cnt.	motor	Pierce	1135	15½	Stmbg.	g.	s.	dd	Covert	.....	selec	unt-m.	3	6.7	Russl	int-g.	sprgs.	sprgs.	int-r-w.	int-r-w.	Ross
Selden	TL	1	1850	126	s.	34x3	34x4	Cont.	3	4-3½x5	19.6	4	l.	..	t.	..	Bos. h	f.	.....	cnt.	motor	Pierce	1135	17	Stmbg.	g.	s.	dd	B-Lipe	.....	selec	unt-m.	3	6.7	Timkn	worm	sprgs.	sprgs.	int-r-w.	int-r-w.	Ross
Selden	JC	2	2350	150	s.	36x4	36x6	Cont.	3	4-3½x5½	22.5	4	l.	..	p.	s.	Bosch	f.	s, l N-East	cnt.	motor	Pierce	1295	15	Stmbg.	g.	s.	dd	B-Lipe	B-Lipe	selec	unt-m.	3	9.4	Russl	int-g.	sprgs.	sprgs.	int-r-w.	ext-r-w	Jacox
Selden	JWL	2	2550	150	s.	36x4	36x6	Cont.	3	4-4½x5½	27.2	4	l.	..	p.	s.	Bosch	f.	s, l*N-East	cnt.	motor	Pierce	1295	15	Stmbg.	g.	s.	dd	B-Lipe	B-Lipe	selec	unt-m.	3	9.2	Timkn	worm	sprgs.	sprgs.	int-r-w.	ext-r-w	Jacox
Selden	NL	3½	3400	164	s.	36x5	36x5d	Cont.	3	4-4½x5½	32.4	2	l.	..	p.	s.	Eismn	h.	s, l*N-East	cnt.	motor	Pierce	1250	13	Stmbg.	g.	s.	dd	B-Lipe	B-Lipe	selec	unt-m.	4	10.3	Timkn	worm	rad-rd.	sprgs.	int-r-w.	int-r-w.	Ross
Selden		5	.....	153*	s.	36x60	40x12	Cont.	..	.....	.....	4	l.	..	t.	s.	Eismn	h.	.....	.....	.....	.....	.....	.....	.....	.....	.....	dd	B-Lipe	B-Lipe	selec	unt-m.	3	...	Timkn	.....	.....	.....	.....	.....	Ross
Service	220	1	1500	135	s*	34x3*	34x4*	Buda	3	4-3½x5½	19.6	4	l.	..	t.	s.	Eismn	h.	s, l* West	cnt.	d-shft.	Duplex	1200	18	Stmbg.	v.	s.	d	.....	Fuller	selec	unt-m.	3	7.0	Timkn	worm	sprgs.	sprgs.	int-r-w.	int-r-w.	Ross
Service	230	1½	2300	137	s.	36x3½	36x5	Buda	3	4-4 x5½	27.2	4	l.	..	p.	s.	Eismn	h.	s, l* West	cnt.	d-shft.	Simplex	1090	14	Master	g.	..	dp	B&Bek	B-Lipe	selec	amid.	3	7.7	Timkn	worm	sprgs.	sprgs.	int-r-w.	int-r-w.	Ross
Service	240	2	2500	160*	s.	36x4	36x7	Buda	3	4-4½x5½	27.2	4	l.	..	p.	s.	Eismn	h.	s, l* West	cnt.	d-shft.	Simplex	1090	12	Master	g.	s.	dp	B&Bek	B-Lipe	selec	amid.	3	7.7	Timkn	worm	sprgs.	sprgs.	int-r-w.	int-r-w.	Ross
Service	270	3½	3300	171*	s.	36x5	36x5d	Buda	3	4-4½x5½	29.0	4	l.	..	p.	s.	Eismn	h.	s, l* West	cnt.	d-shft.	Simplex	1090	12	Master	g.	s.	dp	B&Bek	B-Lipe	selec	amid.	4	8.7	Timkn	worm	rad-rd.	sprgs.	int-r-w.	int-r-w.	Ross
Service	275	3½	3600	171*	s.	36x5	36x5d	Buda	3	4-4½x6	32.4	4	l.	..	p.	s.	Eismn	a.	s, l* West	cnt.	d-shft.	Simplex	1000	14	Master	g.	s.	dp	B&Bek	B-Lipe	selec	amid.	4	8.7	Timkn	worm	rad-rd.	sprgs.	int-r-w.	int-r-w.	Ross
Service	300	5	4300	171½	s.	36x6	36x6d	Buda	3	4-4½x6	32.4	4	l.	..	p.	s.	Eismn	a.	s, l* West	cnt.	d-shft.	Simplex	1000	10	Master	g.	s.	dp	B&Bek	B-Lipe	selec	amid.	4	8.7	Timkn	worm	rad-rd.	sprgs.	int-r-w.	int-r-w.	Ross
Signal	F	1½	1875	144*	s.	34x3½	36x5	Cont.	3	4-3½x5½	22.5	4	l.	..	p.	s.	Eismn	f.	.....	suc.	motor	Mnrch	1100	15	Stmbg.	g.	s.	dd	B-Lipe	B-Lipe	selec	unt-m.	3	7.7	Timkn	worm	rad-rd.	sprgs.	int-r-w.	int-r-w.	Ross
Signal	H	1½-2	2375	144*	s.	34x4	36x6	Cont.	3	4-4½x5½	27.2	4	l.	..	p.	s.	Eismn	f.	.....	suc.	motor	Mnrch	1200	15	Stmbg.	g.	s.	dd	B-Lipe	B-Lipe	selec	unt-m.	3	9.2	Timkn	worm	rad-rd.	sprgs.	int-r-w.	int-r-w.	Ross
Signal	J	2	2835	150*	s.	34x4	36x8	Cont.	3	4-4½x5½	27.2	4	l.	..	p.	s.	Eismn	f.	.....	suc.	motor	Mnrch	1300	15	Stmbg.	g.	s.	dd	B-Lipe	B-Lipe	selec	amid.	4	9.2	Timkn	worm	rad-rd.	sprgs.	int.	int.	Ross
Signal	M	4	3825	168	s.	36x5	40x5d	Cont.	3	4-4½x5½	32.4	2	l.	..	p.	s.	Eismn	f.	.....	suc.	motor	Mnrch	1300	15	Stmbg.	g.	s.	dd	B-Lipe	B-Lipe	selec	amid.	4	10.3	Timkn	worm	rad-rd.	sprgs.	int-r-w.	int-r-w.	Ross

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Tires and Tubes — MOTOR WORLD GUIDE — Tires and Tubes

This table appears in the first issue every month. It is corrected every month and brought up to date.

Name	Trade Name and Tread	28x3	30x3	32x3	30x3½	31x3½	32x3½	34x3½	36x3½	30x4	31x4	32x4	33x4	34x4	35x4	36x4	32x4½	33x4½	34x4½	35x4½	36x4½	37x4½	35x5	36x5	37x5	37x5½	38x5½
ACME	Plain	16.00	17.20	s18.10	23.00	s23.90	24.40	25.80	s27.50	s30.80	s31.90	33.20	34.30	35.50	36.70	38.00	s45.30	46.70	48.30	49.60	51.10	53.60	57.70	59.50	61.40	s76.80	s78.90
	Kam Tread	.....	s17.90	.....	s24.20	s25.10	25.60	.....	.....	.....	s33.50	35.00	36.10	37.40	.....	.....	.....	qc49.00	50.70	52.10	53.70	55.30	60.60	62.60	64.30	.....	.....
	Dimple	18.40	19.60	s21.00	26.40	s27.40	28.00	29.80	s31.60	s35.40	s36.70	38.30	39.60	40.90	42.20	43.70	s52.10	53.70	55.50	57.10	58.80	60.50	66.30	68.50	70.50	s88.30	s90.70
	Hemisphere	.....	s21.60	.....	29.00	.....	30.80	32.70	.....	.....	s40.50	qc42.10	43.60	44.90	46.40	s48.10	.....	.....	.....	62.80	64.70	66.50	s73.00	s75.20	77.70	.....	.....
	Gray and Red Tubes	3.65	3.85	4.15	4.95	5.15	5.45	5.85	6.05	6.05	6.25	6.40	6.65	6.75	6.95	7.15	8.15	8.35	8.45	8.60	8.80	9.05	10.00	10.30	10.55	11.20	11.50
ADVANCE	Plain	s12.75	s13.40	.....	s17.45	s18.35	20.40	s23.80	.....	.....	s26.75	27.25	28.55	29.15	30.15	31.05	.....	s38.05	s39.25	41.10	41.75	43.45	.....	s46.90	s49.65	s74.55	.....
	Non-Skid	s13.35	s14.10	.....	s18.25	s19.30	21.40	s24.95	.....	.....	s28.00	28.60	29.85	30.65	31.50	32.60	.....	s39.95	s41.30	43.10	43.90	45.60	.....	s49.20	s52.15	s78.20	.....
AJAX	Plain	s13.65	s14.45	s18.75	18.60	s19.50	22.55	26.95	28.85	s28.95	30.25	30.80	32.10	32.65	34.10	34.55	.....	.....	43.90	45.55	46.10	47.80	.....	52.50	54.45	.....	.....
	Non-Skid	s15.30	s16.10	s.....	s21.35	s22.20	25.30	29.70	.....	s32.25	33.55	34.10	35.40	35.95	37.40	37.85	qc46.10	qc52.45	48.30	49.95	50.50	52.20	56.85	s56.90	58.85	s78.35	s79.30
	Road King	s14.70	s15.55	.....	s19.95	s20.95	24.25	.....	.....	.....	32.50	33.10	34.55	35.10	.....	37.10	qc48.40	.....	48.95	51.20	52.05	53.90	61.15	s61.40	63.25	.....	.....
	Gray Tubes	3.20	3.00	.....	3.75	3.85	4.00	4.30	4.50	4.75	4.85	5.05	5.25	5.35	5.50	5.70	6.50	.....	.....	6.60	6.85	7.00	8.40	8.50	8.60	9.20	9.35
	Red Tubes	3.50	3.75	.....	4.60	4.75	4.90	5.15	5.40	5.75	5.90	6.05	6.25	6.35	6.50	6.70	.....	.....	8.05	8.30	8.50	8.75	9.90	10.00	10.15	10.85	11.05
AMAZON	Ribbed	.....	qs16.75	.....	qs21.70	.....	qc25.05	.....	.....	.....	.....	qc33.90	qc36.30	qc36.90	.....	.....	.....	.....	qc49.20	qc51.45	.....	.....	.....	.....	.....	.....	.....
	Non-Skid	qs16.70	qs17.65	.....	qs22.85	.....	qc26.35	.....	.....	.....	qs34.75	qc35.70	c38.20	c38.85	.....	.....	.....	qc50.35	c51.80	c54.15	c54.90	qc57.45	c64.75	.....	c66.95	.....	.....
	Gray Tubes	3.15	3.50	.....	4.10	.....	4.25	4.50	.....	.....	5.70	5.90	6.15	6.25	6.40	6.50	.....	7.20	7.30	7.45	7.65	7.95	8.55	9.00	9.10	9.25	10.50
AMERICAN	Plain or Ribbed	13.45	14.45	.....	18.70	19.95	22.00	.....	.....	.....	29.45	30.00	31.70	32.40	.....	.....	.....	.....	43.20	45.25	45.95	.....	56.90	.....	60.90	.....	.....
	Triple A Non-Skid	14.25	15.25	.....	19.50	20.85	22.75	.....	.....	.....	30.25	30.90	32.50	33.20	.....	.....	.....	.....	44.10	46.15	46.85	48.85	57.80	59.00	61.85	.....	.....
	Seal Brown Tubes	3.00	3.25	.....	3.75	3.80	3.85	4.20	.....	.....	4.65	4.80	5.00	5.15	.....	5.60	6.20	6.25	6.30	6.40	6.55	6.70	7.65	7.75	7.90	9.35	9.50
	Red Indian Tubes	3.25	3.50	.....	4.20	4.25	4.30	4.60	.....	.....	5.40	5.50	5.70	5.80	6.00	6.15	6.95	7.00	7.10	7.20	.735	7.65	8.60	8.85	8.95	10.20	10.40
ARABIAN	Fluted Tread	.....	qs15.60	.....	qs20.05	.....	24.45	.....	.....	.....	s31.05	.....	32.80	33.00	.....	36.05	.....	.....	qc43.45	s46.75	48.45	49.05	.....	.....	54.40	.....	.....
	Non-Skid	.....	qs16.40	.....	qs21.10	.....	25.65	.....	.....	.....	32.65	qc33.90	34.45	34.65	.....	38.95	.....	.....	qc45.60	49.05	50.80	51.50	.....	.....	57.10	.....	.....
	Tubes	3.05	3.10	.....	3.65	3.75	3.90	4.35	.....	.....	4.90	5.05	5.25	5.40	5.70	5.75	.....	.....	6.65	6.80	7.05	7.25	.....	8.50	8.45	.....	.....
ARCADIA	Plain	qs14.00	qs15.20	.....	s19.60	.....	22.25	27.85	.....	qs32.70	s29.80	30.40	31.65	32.60	37.60	34.55	.....	.....	43.40	45.25	45.95	47.90	53.25	s59.15	56.00	s99.75	s103.25
	Non-Skid	.....	qs15.95	.....	s20.60	.....	23.45	29.15	.....	qs34.40	31.45	31.90	33.35	34.25	39.45	36.45	.....	.....	45.70	47.45	48.25	50.25	55.75	s62.40	58.95	s105.00	s108.50
	Red Tubes	3.60	3.70	.....	4.50	.....	4.70	5.60	.....	6.25	6.00	6.10	6.40	6.50	7.30	6.80	.....	.....	7.60	7.75	7.90	8.05	8.95	10.10	9.35	11.00	11.20
	Gray Tubes	3.25	3.35	.....	4.00	.....	4.25	4.50	.....	5.10	4.75	4.95	5.10	5.20	5.85	5.50	.....	.....	6.55	6.65	6.75	6.85	7.90	8.90	8.20	9.65	9.80
ARCHER	Ribbed Tread	.....	.....	.....	.....	.....	qc35.90	.....	.....	.....	.....	qc45.15	qc46.30	qc47.50	.....	qc49.90	.....	qc51.90	qc53.25	qc54.55	qc55.80	.....	qc65.85	qc67.55	qc68.90	.....	qc83.15
	Non-Skid	.....	.....	.....	.....	.....	qc37.80	.....	.....	.....	.....	qc47.10	qc48.25	qc49.45	.....	qc51.80	.....	qc53.85	qc55.20	qc56.45	qc57.70	qc58.95	qc67.80	qc69.50	qc70.80	.....	qc85.10
	Gray Tubes	.....	3.15	.....	3.25	.....	3.40	.....	.....	.....	.....	4.60	4.75	4.85	.....	5.10	.....	6.00	6.05	6.15	6.25	6.35	7.35	7.50	7.65	.....	8.50
	Red Tubes	.....	4.15	.....	4.25	.....	4.40	.....	.....	.....	.....	6.00	6.15	6.30	.....	6.55	.....	7.80	7.85	8.00	8.15	8.20	9.55	9.75	9.95	.....	10.80
ARMSTRONG	Red Tubes	4.00	4.18	4.30	4.80	4.95	5.00	5.05	5.20	5.30	5.40	5.50	5.65	5.75	6.90	6.00	7.30	7.45	7.60	7.85	7.95	8.15	9.25	9.35	9.45	10.00	10.10
BALTIMORE	Plain	17.30	17.70	.....	21.50	o23.85	25.30	27.50	.....	.....	o29.55	30.40	o31.50	32.60	o33.85	34.85	.....	39.20	40.50	o41.75	44.05	o45.25	o51.10	53.55	o55.85	.....	80.20
	Box Tread	20.18	21.15	.....	26.45	o27.30	30.20	32.80	.....	.....	o36.50	37.70	o38.80	40.20	o41.50	43.80	.....	45.45	47.10	o49.90	54.20	o55.30	o61.60	64.00	o65.50	.....	94.80
	Tubes	3.25	3.34	.....	4.30	4.45	4.60	4.95	.....	.....	5.45	5.55	5.75	5.95	6.05	6.20	.....	7.25	7.45	7.60	7.85	8.10	8.90	9.15	9.45	.....	11.05
	Wil-Mot Plain	.....	12.20	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Non-Skid	.....	12.80	.....	16.60	17.55	19.45	.....	.....	.....	25.45	.....	27.15	27.85	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
BATAVIA	Plain	.....	qs13.05	.....	qs16.60	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Ribbed	.....	.....	.....	.....	.....	qc22.70	qc25.75	.....	.....	.....	c30.90	c32.45	c33.15	qc34.65	cs35.20	cs41.30	qc42.65	c44.00	c46.00	c46.70	cs48.75	c57.70	.....	c61.10	.....	.....
	Security Non-Skid	13.10	15.25	.....	19.40	20.90	22.70	25.75	.....	.....	qs30.25	q30.90	32.45	33.15	34.65	35.20	41.30	qs42.65	44.00	46.00	46.70	48.75	57.70	c58.50	61.10	86.65	90.00
	Gray Tubes	2.95	3.05	.....	3.45	3.65	3.80	4.10	.....	.....	4.90	5.05	5.25	5.35	5.45	5.55	6.50	6.60	6.65	6.75	6.90	7.10	8.10	8.25	8.40	9.20	9.45
BERGOUGNAN	Plain	s14.85	s17.70	.....	s21.60	s22.85	25.20	s27.85	.....	35.25	s30.90	32.85	35.20	37.20	s38.00	s40.00	.....	47.60	50.35	50.95	51.45	s53.05	59.45	60.70	62.35	.....	83.10
	Non-Skid	s16.70	s18.10	.....	s25.20	s26.30	27.55	s29.55	.....	39.65	s34.90	36.50	39.30	40.75	s42.65	s43.70	.....	52.90	53.85	55.05	56.70	s59.10	65.15	68.15	69.65	.....	91.80
	Red Tubes	3.75	3.80	.....	4.45	4.80	4.85	5.20	.....	6.60	6.05	6.25	6.60	6.75	6.95	7.15	.....	8.10	8.20	8.30	8.65	8.90	9.70	10.00	10.15	.....	11.20
BESAW	Plain	.....	19.50	.....	24.50	.....	27.00	28.00	.....	.....	.....	35.50	36.75	37.75	39.25	40.25	.....	.....	45.25	47.75	50.00	.....	55.00	56.25	57.50	.....	.....
	Non-Skid	.....	.....	.....	28.00	.....	30.50	31.75	.....	.....	39.25	40.25	41.50	43.00	44.00	.....	.....	.....	47.25	50.25	55.00	57.50	62.25	64.75	66.00	.....	.....
	Red Tubes	.....	3.90	.....	4.90	5.00	5.10	5.75	.....	.....	6.15	6.40	6.60	6.80	7.25	7.35	.....	.....	8.55	8.75	8.95	9.20	10.30	10.65	10.75	.....	.....
	Blackford Non-Skid	.....	qs16.20	.....	qs20.70	qs21.50	24.00	24.00	.....	.....	qs30.00	33.00	34.65	35.25	.....	.....	.....	.....	.....	44.00	.....	.....	.....	.....	.....	.....	.....
	Blackford Gray Tubes	.....	3.65	.....	4.15	4.25	4.35	4.35	.....	.....	5.50	5.60	5.75	5.95	.....	.....	.....	.....	.....	7.60	.....	.....	.....	.....	.....	.....	.....
BOONE	Smooth	.....	13.05	.....	16.90	17.80	19.40	.....	.....	.....	25.85	26.40	27.70	28.35	.....	30.10	.....	.....	37.60	39.35	39.95	.....	43.95	.....	46.55	.....	.....
	Ribbed Tread	.....	14.45	.....	18.75	19.85	21.00	.....	.....	.....	28.70	29.35	30.80	31.40	.....	33.45	.....	.....	41.80	43.65	44.35	.....	52.20	.....	55.25	.....	.....
	Non-Skid	.....	17.15	.....	22.20	23.80	25.55	.....	.....	.....	34.05	34.75	36.80	37.30	.....	39.60	.....	.....	49.50	51.75	52.55	.....	61.80	.....	65.45	.....	.....
	Gray Tubes	.....	3.05	.....	3.50	3.60	3.65	.....	.....	.....	4.80	4.95	5.10	5.20	.....	5.45	.....	.....	6.50	6.60	6.70	.....	7.90	.....	8.25	.....	.....
	Red Tubes	.....	4.00	.....	4.55	.....	4.70	.....	.....	.....	6.25	6.45	6.60	6.75	.....	7.05	.....	.....	8.45	8.60	8.75	.....	10.30	.....	10.60	.....	.....
BOWERS	Plain	16.85	17.85	.....	24.00	25.50	26.95	28.80	.....	.....	33.50	35.45	37.25	38.20	39.05	40.95	.....	.....	47.40	49.50	51.26	.....	61.55	63.00	64.35	.....	90.85
	Grip Tread	18.70	19.65	.....	28.30	29.70	31.70	34.55	.....	.....	37.30	38.80	40.05	41.90	42.90	43.90	.....	.....	51.25	53.15	56.00	.....	67.20	69.65	71.85	.....	103.40
	Gray Tubes	3.30	3.80	.....	4.10	4.35	4.60	4.85	.....	.....	5.95	6.10	6.40	6.50	6.60	6.75	.....	.....	7.70	8.10	8.40	.....	9.50	9.70	10.00	.....	11.75
BRAENDER	Plain	s13.95	s14.30	s18.10	18.35	s19.15	21.30	24.05	qs30.00	s27.65	28.20	28.70	30.15	30.80	32.65	31.90	41.25	40.05	41.35	43.25	43.95	44.60	49.40	55.90	53.35	q82.95	87.75
	Non-Skid	s16.20	s16.45	s21.00	21.30	s22.20	24.70	37.90	qs34.80	s32.05	33.75	33.35	35.00	35.75	37.90	37.00	47.75	46.40	47.95	50.15	51.00	51.75	57.30	64.80	61.90	q96.20	101.75

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Name	Trade Name and Tread	28x3	30x3	32x3	30x3½	31x3½	32x3½	34x3½	36x3½	30x4	31x4	32x4	33x4	34x4	35x4	36x4	32x4½	33x4½	34x4½	35x4½	36x4½	37x4½	35x5	36x5	37x5	37x5½	38x5½
BRAENDER (Continued)	Gray Tubes	3.25	3.40	3.60	4.15	4.25	4.40	4.50	.....	5.30	5.40	5.65	5.75	5.85	6.10	6.30	7.00	7.10	7.20	7.35	7.55	7.90	8.90	9.05	9.15	10.00	10.25
	Red Tubes	3.60	3.70	4.00	4.60	4.70	4.80	5.00	.....	5.90	6.00	6.20	6.40	6.60	6.80	7.00	7.80	7.90	8.10	8.20	8.40	8.70	9.80	10.00	10.20	11.00	11.20
BRUNSWICK	Plain	13.30	qs14.35	.....	qs18.25	s19.60	21.35	c24.20	.....	.....	qs24.35	c29.05	c30.45	c31.20	c32.60	c33.10	c38.85	c40.05	c41.35	c43.30	c43.95	c45.80	c50.75	c51.65	c53.80	s83.10	c92.45
	Skid Not	15.60	qs16.85	.....	qs21.35	qs23.00	24.95	c28.35	.....	.....	qs33.20	c34.00	c35.70	c36.45	c38.10	c38.70	c45.45	c46.90	c48.40	c50.60	c51.35	c53.65	c59.40	c60.30	c62.95	s103.90	c113.00
	Gray Tubes	2.85	2.90	.....	3.45	3.60	3.75	3.95	.....	.....	4.60	4.85	5.05	5.20	5.35	5.45	.....	6.40	6.50	6.70	6.95	7.10	7.70	7.90	8.15	9.20	9.45
	Red Tubes	3.30	3.40	.....	4.15	4.25	4.40	4.65	.....	.....	5.50	5.65	5.90	6.15	6.30	6.45	.....	7.15	7.30	7.45	7.70	7.85	8.65	8.85	9 00	10.45	10.80
BULL	Plain	qs13.50	qs14.00	.....	qs17.90	qs19.55	21.10	c23.80	.....	.....	qs27.85	q28.35	c30.00	c30.45	c31.65	cs37.90	.....	.....	cs41.75	c43.25	c43.85	cs53.75	c50.90	cs51.75	c53.65	.....	.....
	Non-Skid	qs15.15	qs15.70	.....	qs19.95	q.21.35	23.60	c26.95	.....	.....	qs31.50	q32.05	c33.90	c34.50	c36.30	cs43.40	.....	.....	cs46.75	c48.60	c49.15	cs60.00	c59.95	cs61.05	c63.10	.....	.....
	Red Tubes	3.30	3.40	3.80	4.15	4.25	4.40	4.65	4.95	5.60	5.50	5.65	5.90	6.15	6.30	6.60	.....	.....	7.30	7.45	7.70	8.30	8.65	8.85	9.00	.....	.....
	Gray Tubes	2.85	2.90	3.35	3.45	3.60	3.75	3.95	4.35	4.90	4.70	4.85	5.05	5.15	5.45	5.65	.....	.....	6.50	6.70	6.95	7.30	7.95	8 15	8.25	.....	.....
CAPITOL	Plain	qs13.90	qs13.65	.....	qs17.90	qs18.60	20.80	24.15	.....	c29.00	qs27.15	c27.95	29.15	c29.70	c33.70	c31.75	.....	.....	c39.75	c41.70	c42.35	c43.60	c47.70	cs53.15	c50.50	.....	.....
	Non-Skid	qs14.85	qs14.30	.....	qs18.35	qs19.70	21.75	25.80	.....	c30.20	qs28.50	c29.20	30.40	c31.25	c35.35	c33.10	.....	.....	c42.00	c43.55	c44.45	c36.05	c50.05	cs56.55	c52.95	.....	.....
	Redman Tubes	3.50	3.40	3.80	4.20	4.25	4.35	4.65	4.95	5.35	5.50	5.60	5.85	6.10	6.25	6.35	.....	.....	7.30	7.40	7.50	7.75	8.90	9.20	9.00	.....	.....
	Paragum Gray Tubes	3.10	3.05	3.50	3.55	3.85	3.95	4.55	4.70	4.95	4.75	4.85	5.00	5.20	5.70	5.45	.....	.....	6.45	6.55	6.70	7.00	8.00	8.50	8.20	.....	.....
CARLISLE	Lightning Tread	.....	.....	.....	.....	.....	qc38.50	.....	.....	.....	.....	qc48.75	c50.25	qc51.50	.....	.....	qc55.00	qc56.50	c58.00	c59.25	c60.75	.....	c72.00	.....	c75.50	.....	cs91.50
CARSPRING	Plain	qs18.20	qs19.55	.....	s25.30	.....	29.15	36.30	.....	qs36.75	s35.20	36.00	37.70	38.50	44.55	41.00	.....	.....	51.40	53.70	54.45	56.65	62.50	s69.85	66.25	s102.85	s105.60
	"C" Tread	.....	qs20.45	.....	s26.50	.....	30.55	38.25	.....	qs38.50	s36.95	37.75	39.60	40.50	46.75	43.15	.....	.....	53.90	56.25	57.15	59.50	65.70	s73.70	69.55	s108.35	s111.00
	Suction Tread	.....	.....	.....	s29.75	.....	34.25	42.90	.....	qs42.70	s41.40	42.30	44.25	45.35	52.25	48.20	.....	.....	60.35	63.00	64.10	66.75	73.50	s82.50	77.80	s121.00	s124.30
	Red Tubes	3.60	3.70	.....	4.50	.....	4.70	5.60	.....	6.25	6.00	6.10	6.40	6.50	6.30	6.80	.....	.....	7.60	7.75	7.90	8.05	8.95	10.10	9.35	11.00	11.20
	Gray Tubes	3.25	3.35	.....	4.00	.....	4.25	4.50	.....	5.10	4.75	4.95	5.10	5.20	5.85	5.50	.....	.....	6.55	6.65	6.75	6.85	7.90	8.90	8.20	9.60	9.80
CENTURY-PLAINFIELD	Plain	.....	.....	.....	q26.00	qs27.50	30.50	.....	.....	.....	s36.00	38.00	39.00	40.00	.....	43.75	s48.00	qc47.25	49.00	50.35	54.15	55.00	61.75	64.50	65.70	.....	s87.00
	Non-Skid	.....	qs22.00	.....	28.00	29.00	32.00	.....	.....	.....	s38.00	40.00	41.00	42.00	.....	46.00	s50.50	qc49.75	51.50	53.00	57.00	58.00	65.00	68.00	69.00	s86.00	s91.00
	Superbar	.....	16.30	.....	qs21.50	qs22.50	c21.85	.....	.....	.....	qs28.00	c28.60	c29.85	c30.65	c35.00	.....	.....	.....	c41.30	c43.10	43.90	.....	49.20	55.70	52.15	.....	.....
	Tubes	3.45	3.55	3.80	4.55	4.70	4.90	5.25	5.55	5.65	5.75	5.85	6.10	6.30	6.35	6.55	7.35	.....	7.90	8.05	8.35	8.60	9.45	9.65	10.00	.....	11.65
CHAMPION	Non-Skid	14.45	14.10	.....	18.25	.....	21.40	23.80	.....	.....	28.00	28.60	29.85	30.65	.....	35.90	.....	39.95	41.30	43.10	43.90	50.20	49.25	55.70	52.15	.....	.....
	McLean Red Tubes	3.40	3.70	.....	4.05	4.30	4.40	4.60	.....	.....	5.50	5.65	5.95	6.10	6.25	6.50	.....	7.45	7.50	7.70	7.80	8.05	9.15	9.30	9.40	.....	.....
CHESTER	Plain	s13.50	s14.00	s18.25	s17.90	s19.55	21.10	23.80	s30.00	s31.90	s27.85	28.35	30.00	30.45	s31.65	s37.90	.....	.....	s41.75	43.25	43.95	s53.75	50.90	s51.75	53.65	.....	.....
	Non-Skid	s15.15	s15.70	s20.75	s19.95	s21.35	23.60	26.95	s34.20	s37.50	s31.50	32.05	33.90	34.50	s36.30	s43.40	.....	.....	s46.75	48.60	49.15	s60.00	59.95	s61.05	63.10	.....	.....
	Red Tubes	3.30	3.40	3.80	4.15	4.25	4.40	4.65	4.95	5.60	5.50	5.65	5.90	6.15	6.30	6.60	.....	.....	7.30	7.45	7.70	8.30	8.65	8.85	9.00	.....	.....
	Gray Tubes	2.85	2.90	3.35	3.45	3.60	3.75	4.10	4.50	4.90	4.70	4.85	5.05	5.15	5.45	5.65	.....	.....	6.50	6.70	6.95	7.30	7.95	8.15	8.25	.....	.....
CLEVELAND-STANDARD	Plain	19.80	20.50	.....	25.30	26.80	28.15	31.90	.....	34.10	34.50	35.65	27.40	38.50	39.60	40.70	.....	47.55	47.95	48.80	50.15	51.45	58.30	60.00	61.60	79.20	88.00
	Non-Skid	20.90	23.60	.....	29.90	31.90	34.75	36.30	.....	39.15	40.00	40.90	41.80	42.90	44.20	45.50	49.50	51.05	51.90	53.25	56.10	58.10	64.20	67.75	69.75	90.80	96.80
	Red Tubes	3.65	3.70	4.35	4.60	4.65	4.80	5.20	.....	5.85	5.95	6.15	6.30	6.45	6.90	6.95	7.80	7.90	7.95	8.10	8.35	8.65	9.80	10.10	10.15	11.60	11.85
	Gray Tubes	3.40	3.50	3.75	4.30	4.40	4.50	5.00	.....	5.35	5.50	5.65	5.80	6.00	6.20	6.40	7.15	7.25	7.40	7.50	7.70	8.00	8.90	9.10	9.20	10.55	10.75
COLUMBIA	Plain	13.80	14.20	17.30	18.45	19.45	21.50	27.90	.....	29.85	28.25	28.80	30.10	30.80	37.20	32.85	.....	.....	41.60	43.45	44.15	45.90	49.55	57.85	52.55	.....	.....
	Non-Skid	14.50	14.95	.....	19.35	20.35	22.45	29.25	.....	.....	29.65	30.20	31.65	32.40	39.00	34.50	.....	.....	43.65	45.65	46.35	48.25	52.05	60.75	55.20	.....	.....
	Gray Tubes	2.95	3.00	3.40	3.75	3.80	3.85	4.55	.....	4.95	4.75	4.85	5.00	5.15	5.75	5.50	.....	.....	6.25	6.45	6.65	6.85	7.80	8.60	8.10	.....	.....
	Red Tubes	3.30	3.35	3.80	4.20	4.25	4.30	5.05	.....	5.50	5.30	5.40	5.55	5.70	6.45	6.10	.....	.....	7.00	7.15	7.35	7.65	8.70	9.50	8.95	.....	.....
COMBINATION	Plain	qs12.75	qs13.70	.....	qs17.85	qs18.85	20.55	q23.25	.....	.....	qs27.35	27.85	29.20	29.85	31.30	31.80	39.20	.....	39.75	41.50	42.20	51.60	s46.40	47.15	49.10	.....	cs70.25
	Hold-on Non-Skid	qs15.05	qs16.05	.....	qs20.55	qs21.55	23.70	q26.85	.....	.....	qs31.35	32.00	33.65	34.26	35.90	36.25	44.15	.....	46.75	48.85	49.60	51.60	s57.25	58.10	60.60	.....	cs84.30
	Gray Tubes	3.00	3.15	.....	3.75	3.80	3.90	4.15	.....	.....	5.00	5.25	5.35	5.50	5.65	5.90	6.55	.....	6.75	6.95	7.15	7.25	8.15	8.40	8.55	.....	9.10
	Red Tubes	3.30	3.45	.....	4.15	4.20	4.35	4.65	.....	.....	5.50	5.85	5.95	6.10	6.20	6.50	7.20	.....	7.50	7.75	8.00	8.10	9.15	9.30	9.45	.....	10.05
COMPRESSION	Patented Tube	14.00	15.00	.....	16.00	17.00	18.00	19.00	.....	.....	20.00	21.00	22.00	23.00	24.00	25.00	.....	26.00	27.00	28.00	29.00	30.00	32.00	33.00	34.00	.....	.....
CONVERSE	Plain	.....	s20.20	.....	s26.00	s28.65	30.25	.....	.....	.....	35.00	36.30	37.60	38.95	40.10	41.40	qc45.00	qc46.40	47.85	49.40	50.70	52.10	58.70	60.60	62.15	.....	.....
	Non-Skid	.....	.....	.....	27.50	32.90	36.10	.....	.....	.....	43.05	44.40	45.95	47.60	48.80	50.15	52.45	54.05	55.65	58.60	63.00	64.80	72.00	74.85	77.35	.....	.....
	Gray Tubes	.....	3.30	3.75	4.00	4.10	4.20	4.60	.....	.....	5.30	5.45	5.70	5.90	6.00	6.25	.....	.....	7.00	7.40	7.75	7.80	8.80	8.85	9.00	9.35	9.75
	Red Tubes	.....	3.75	4.05	4.45	4.65	4.70	4.95	.....	.....	5.85	6.00	6.30	6.55	6.70	6.90	.....	.....	8.00	8.15	8.50	8.70	8.90	10.00	10.15	10.40	10.80
CORTLAND	C. C. Plain	.....	s12.20	.....	s15.85	.....	18.55	s21.00	.....	.....	s24.30	34.75	25.95	26.50	s28.00	s28.25	s33.50	s39.60	35.70	37.35	37.95	s39.50	42.65	s44.10	45.15	s60.00	s61.00
	C. C. Non-Skid	.....	s12.80	.....	s16.60	.....	19.45	s22.10	.....	.....	s25.45	26.00	27.15	27.85	s29.00	s29.65	s35.00	s36.30	37.55	39.20	39.90	s41.45	44.75	s46.15	47.40	s62.50	s64.00
	Regular Plain	.....	s17.75	.....	s22.25	.....	25.00	s28.00	.....	.....	s39.25	31.50	32.50	33.50	s34.50	s35.50	s40.50	s41.50	43.00	45.00	46.00	s48.50	55.50	s57.00	59.75	s77.00	s80.00
	Gripper Non-Skid	.....	s20.40	.....	s25.00	.....	28.75	s31.00	.....	.....	s37.00	39.00	40.00	41.00	s42.00	s43.00	s47.00	s48.00	49.00	51.75	55.50	s58.00	65.75	s67.50	69.50	s87.00	s89.00
CUPPLES	Rough Tread	.....	qs18.00	.....	qs24.75	.....	qc30.00	.....	.....	.....	qs39.75	qc40.75	qc43.00	c44.00	.....	.....	.....	qc54.75	qc55.50	qc57.00	c58.25	.....	c68.25	.....	cs71.75	.....	.....
	Red Tubes	.....	3.95	.....	4.75	.....	4.95	.....	.....	.....	6.40	6.60	6.75	6.95	.....	.....	.....	8.40	8.65	8.80	8.95	.....	10.50	.....	10.95	.....	.....
	Rhinos Inner Tubes	.....	7.90	.....	9.50	.....	9.90	.....	.....	.....	12.80	13.20	13.50	13.90	.....	.....	.....	16.80	17.30	17.60	17.90	.....	21.00	.....	21.90	.....	.....
CURTIS	Plain	18.20	18.50	.....	24.70	.....	27.60	.....	.....	.....	32.25	33.45	34.65	35.85	.....	38.10	.....	.....	44.15	45.50	46.75	48.00	54.30	55.80	57.30	.....	.....
	Suction	20.70	20.90	.....	27.25	.....	33.00	.....	.....	.....	39.75	41.15	42.35	43.90	.....	46.20	.....	.....	51.30	52.90	57.40	59.10	65.25	66.60	71.30	.....	.....
	Gray Tubes	3.35	3.45	.....	4.00	.....	4.15	.....	.....	.....	5.40	5.65	5.80	5.90	.....	6.15	.....	.....	7.35	7.55	7.75	8.00	9.00	9.30	9.40	.....	.....
	Red Tubes	3.65	3.85	.....	4.45	.....	4.55	.....	.....	.....	6.05	6.20	6.45	6.55	.....	6.80	.....	.....	8.15	8.30	8.65	8.80	9.90	10.20	10.30	.....	.....
DAYTON	Plain	qs19.55	qs18.70	.....	qs22.80	qs25.25	26.80	.....	.....	s40.35	qs31.35	qs32.55	33.75	34.90	s35.95	37.10	s50.45	.....	43.05	44.30	45.65	46.70	s52.95	s54.45	55.80	.....	s83.70
	Non-Skid	qs23.75	22.35	.....	qs27.80	qs28.90	32.05	.....	.....	.....	qs38.70	qs40.00	41.15	42.60	s44.05	46.50	.....	.....	49.95	52.95	57.50	58.70	s65.45	s67.95	69.55	s86.55	s100.75
	Red Tubes	3.45	3.55	.....	4.55	4.70	4.90	.....	.....	5.65	5.80	5.90	6.10	6.30	6.40	6.55	7.40	.....	7.90	8.05	8.85	8.60	9.45	9.65	10.00	11.45	11.65
DEFIANCE	Plain	qs13.00	qs13.15	.....	17.45	s17.70	21.30	22.55	.....	.....	s26.95	27.70	28.55	29.15	29.95	31.10	.....	.....	39.05	41.50	42.00	.....	.....	cs47.85	c49.65	.....	.....
	Tiger Tread	qs14.35	qs14.60	.....	19.20	s19.80	22.85	25.05	.....	.....	s29.05	31.08	31.55	32.85	33.28	33.70	.....	.....	42.25	45.70	47.25	.....	.....	cs51.15	c54.45	.....	.....
	Gray Tubes	3.05	3.10	.....	3.65	3.75	3.90	4.35	.....	.....	4.90	5.05	5.25	5.40	5.70	5.75	.....	.....	6.65	6.80	7.05	.....	.....	8.50	8.45	.....	.....
	Red Tubes	3.15	3.45	.....	3.90	3.95	4.00	4.50	.....	.....	4.95	5.00	5.40	5.55	5.70	5.85	.....	.....	6.10	7.10	7.25	.....	.....	7.65	8.30	.....	.....

Digitized by Google

TIRES AND TUBES—Continued

Name	Trade Name and Tread	28x3	30x3	32x3	30x3½	31x3½	32x3½	34x3½	36x3½	30x4	31x4	32x4	33x4	34x4	35x4	36x4	32x4½	33x4½	34x4½	35x4½	36x4½	37x4½	35x5	36x5	37x5	37x5½	38x5½
DEFIANCE (Continued)	Double Wall Tubes	4.13	4.20	.....	4.97	5.11	5.32	5.88	.....	.....	6.65	6.86	7.14	7.35	7.77	7.70	.....	.....	9.03	9.24	9.59	.....	.....	11.55	11.48	.....	.....
DELAWARE	Plain	s12.30	s12.10	s16.00	15.70	s16.35	18.35	21.20	s22.55	s25.25	s23.80	24.25	25.70	26.25	29.65	27.70	.....	.....	35.00	36.60	37.55	38.70	.....	s47.30	44.70	.....	.....
	Non-Skid	s12.90	s12.65	s16.75	16.45	s17.20	19.25	22.25	s23.60	s26.45	s24.95	25.50	26.90	27.60	31.15	29.05	.....	.....	36.80	38.40	39.50	40.60	.....	s49.60	46.95	.....	.....
	Gray Tubes	3.05	3.00	3.30	3.65	3.70	3.75	4.40	4.65	4.80	4.60	4.70	4.90	5.05	5.60	5.35	.....	.....	6.05	6.25	6.50	6.70	.....	8.35	7.95	.....	.....
DELION	Plain	16.10	18.00	19.40	22.80	24.15	26.45	28.00	33.15	35.55	31.15	33.15	33.45	37.45	38.35	40.35	46.90	48.00	50.75	51.37	51.90	53.45	59.90	61.70	62.85	80.95	83.80
	Non-Skid	18.00	19.35	21.00	26.45	27.60	29.00	29.75	39.25	40.00	35.20	36.85	39.65	40.95	42.90	44.05	52.25	53.35	54.30	55.55	57.25	59.60	65.70	67.60	70.25	89.35	92.65
	Red Tubes	3.50	3.50	3.90	4.15	4.45	4.55	4.85	5.10	6.10	5.60	5.80	6.10	6.25	6.40	6.60	7.40	7.50	7.60	7.75	8.00	8.20	9.00	9.25	9.45	10.25	10.50
DIAMOND	Smooth	14.50	14.10	18.90	18.35	19.30	21.45	25.05	26.65	29.85	28.15	28.70	30.05	30.70	35.05	36.00	38.95	40.05	41.30	43.25	43.95	50.30	49.35	55.90	52.25	78.45	70.85
	Squeegee	15.20	14.85	19.80	19.20	20.30	22.50	26.25	27.90	31.25	29.45	30.10	31.40	32.25	36.85	37.80	40.95	42.04	43.45	45.35	46.20	52.85	51.85	58.65	54.90	82.30	74.40
	Gray Tubes	3.25	3.20	3.60	4.40	4.00	4.05	4.80	5.05	5.20	5.00	5.10	5.25	5.40	6.10	6.30	6.25	6.45	6.60	6.80	7.00	8.00	8.20	9.05	8.55	9.75	9.95
	Brown Tubes	3.55	3.50	4.00	4.40	4.45	4.50	5.30	5.65	5.80	5.60	5.70	5.85	6.00	6.80	6.95	6.95	7.15	7.35	7.50	7.75	8.80	9.15	10.00	9.40	10.85	11.05
DOUBLE FABRIC	Xtra-Ply	16.35	qs17.45	.....	qs22.65	qs24.40	c26.70	.....	.....	.....	qs32.90	qc35.50	c37.30	c38.10	.....	c40.55	.....	.....	c48.15	c49.90	c51.50	c53.95	c63.20	.....	c66.85	.....	.....
	Duo-Cord	.....	qs21.45	.....	qs27.95	.....	c32.10	.....	.....	.....	.....	qc43.35	c44.70	c46.05	.....	.....	c54.35	c56.05	c57.85	.....	.....	.....	c71.75	.....	c75.80	.....	.....
	Brazil Gray Tubes	3.15	3.35	.....	3.80	3.85	4.05	4.15	4.35	.....	5.15	5.35	5.45	5.55	5.80	5.90	.....	.....	7.05	7.15	7.25	7.35	8.55	8.65	8.85	9.35	.....
DREADNAUGHT	Vacuum Red	.....	qs17.95	.....	qs22.55	qs23.75	c28.50	.....	.....	.....	qs34.70	c35.30	c37.10	c37.90	.....	cs39.95	.....	qc48.55	c49.20	c51.45	c52.25	cs54.65	c60.05	cs61.25	c63.50	.....	.....
	Ribbed Tread	.....	qs15.25	.....	qs19.75	qs21.00	c25.15	.....	.....	.....	qs30.20	c31.35	c32.55	c32.95	.....	cs36.20	.....	qc42.65	c43.85	c45.80	c46.55	cs48.95	c51.25	cs52.00	c54.30	.....	.....
	Super-Dreadnaught Red Tubes	.....	3.40	.....	4.15	4.25	4.40	4.65	.....	.....	5.50	5.65	5.90	6.15	6.30	6.45	.....	7.15	7.30	7.45	7.70	7.85	8.65	8.85	9.00	10.45	10.80
DRY CLIMATE	Plain	12.10	13.05	.....	16.60	17.80	19.40	22.00	.....	.....	25.85	26.40	27.40	28.35	29.65	30.10	.....	.....	37.60	39.35	39.95	41.65	46.15	46.85	48.90	.....	.....
	Non-Skid	14.20	15.25	.....	19.40	20.90	22.70	25.75	.....	.....	30.25	30.90	32.45	33.15	34.65	35.20	41.30	42.65	44.00	46.00	46.70	48.75	57.70	58.50	61.10	.....	.....
	Red Tubes	3.05	3.95	4.10	4.50	4.60	4.95	5.35	5.60	5.75	6.40	6.60	6.75	6.95	7.05	7.20	8.40	8.50	8.65	8.80	8.95	9.25	10.50	10.75	10.95	.....	.....
	Gray Tubes	2.95	3.05	3.15	3.45	3.65	3.80	4.45	4.50	4.55	4.90	5.05	5.25	5.35	5.45	5.55	6.50	6.60	6.65	6.75	6.90	7.10	8.10	8.25	8.40	.....	.....
DUNLOP	Cross Groove	.....	22.95	.....	28.55	30.20	32.15	34.60	36.50	.....	38.55	42.10	44.30	46.40	48.60	51.30	52.35	53.35	54.35	57.70	58.30	60.40	64.35	67.05	69.70	78.50	.....
	Traction Non-Skid	.....	25.00	.....	33.80	35.55	36.75	39.40	42.50	.....	46.25	50.10	53.05	55.50	57.70	59.55	60.15	62.25	64.35	66.45	68.65	70.75	79.50	83.00	84.40	92.35	97.90
	Tubes	4.80	4.85	.....	6.15	6.25	6.40	7.20	7.50	.....	7.70	8.00	8.25	8.55	9.05	9.05	10.45	10.45	10.70	10.95	11.20	11.50	12.90	13.35	13.35	14.75	15.15
DUPLEX	Plain	13.65	14.55	15.60	18.95	19.55	19.55	21.95	.....	29.70	30.90	30.90	31.95	34.20	35.25	36.35	42.60	44.05	45.45	46.95	48.40	49.75	56.90	58.50	60.15	70.35	72.15
	Non-Skid	19.45	21.00	22.75	27.85	28.85	29.40	30.35	.....	38.40	39.55	41.25	42.70	44.05	46.70	46.15	52.95	53.05	54.70	56.45	58.05	59.75	67.20	68.50	69.60	89.25	92.50
	Red Tubes	3.60	3.85	4.10	5.15	5.30	5.45	5.75	.....	7.25	7.60	7.75	8.05	8.20	8.50	8.70	9.65	9.80	10.05	10.35	10.60	11.00	12.25	12.50	12.95	14.55	14.90
DURAL	Red Tubes	3.65	3.75	.....	4.55	4.70	4.85	5.10	.....	.....	6.05	6.20	6.50	6.75	6.95	7.10	.....	7.85	8.05	8.25	8.45	8.65	9.50	9.75	9.90	.....	.....
	Gray Tubes	2.80	2.85	.....	3.40	3.55	3.70	3.90	.....	.....	4.55	4.80	5.00	5.15	5.30	5.40	.....	6.30	6.40	6.60	6.85	7.00	7.60	7.80	8.05	.....	.....
EHMAN	Plain	13.80	13.40	.....	17.45	18.35	20.40	23.80	.....	.....	26.75	27.25	28.55	39.15	33.30	34.20	.....	38.05	39.25	41.10	41.75	47.80	46.90	53.10	49.65	.....	.....
	Track Tread	14.45	14.10	.....	18.25	19.30	21.40	24.95	.....	.....	28.00	28.60	29.85	30.65	35.00	35.90	.....	39.95	41.30	43.10	43.90	50.20	49.25	55.70	52.15	.....	.....
	Non-Skid Worm Drive Tread	14.45	14.10	.....	18.25	19.30	21.40	24.95	.....	.....	28.00	28.60	29.85	30.65	35.00	35.90	.....	39.95	41.30	43.10	43.90	50.20	49.25	55.70	52.15	.....	.....
	Non-Skid Wrapped Tread	15.15	14.80	.....	19.15	20.25	22.47	26.20	.....	.....	29.40	30.05	31.35	32.20	36.75	37.70	.....	41.95	43.35	45.25	46.10	52.70	51.70	58.50	54.75	.....	.....
	Gray Tubes	3.10	3.05	.....	3.75	3.80	3.85	4.55	.....	.....	4.75	4.85	5.00	5.15	5.80	5.50	.....	6.15	6.25	6.45	6.65	6.90	7.80	8.60	8.10	.....	.....
	Red Tubes	3.40	3.35	.....	4.20	4.25	4.30	5.05	.....	.....	5.30	5.40	5.55	5.70	6.45	6.10	.....	6.80	7.00	7.15	7.35	7.65	8.70	9.50	8.95	.....	.....
EMPIRE	Smooth Gray	qs15.20	qs16.10	.....	20.40	qs21.25	23.55	26.25	27.55	.....	31.45	32.05	33.45	34.00	35.45	35.70	.....	46.20	46.55	48.50	49.05	50.80	57.90	58.50	60.80	.....	.....
	Non-Skid Gray	qs16.00	qs16.95	.....	21.45	qs22.40	24.80	27.60	29.00	.....	33.10	33.70	35.20	35.80	37.30	37.55	48.75	48.60	49.00	51.05	51.65	53.45	60.95	61.60	64.00	.....	.....
	Gray Tubes	3.00	3.15	3.30	3.60	3.70	3.75	3.90	4.10	4.80	4.90	5.05	5.15	5.30	5.45	5.60	6.45	6.60	6.65	6.75	6.85	7.05	8.10	8.20	8.40	9.00	9.15
	Smooth Red	qs17.95	qs19.05	.....	24.90	qs26.10	28.55	32.45	34.10	.....	38.00	38.70	40.70	41.65	43.55	44.20	.....	56.50	55.55	57.95	60.10	61.30	64.75	65.70	68.60	.....	.....
	Non-Skid Red	qs18.75	qs20.00	.....	26.10	qs27.50	30.10	34.10	35.95	.....	40.00	40.80	42.85	43.70	45.85	46.60	58.20	59.45	58.45	61.00	63.35	64.55	68.20	69.20	72.20	.....	.....
	Red Tubes	3.45	3.65	3.85	4.05	4.20	4.20	4.65	5.15	5.35	5.55	5.65	5.90	6.05	6.20	6.40	7.65	7.80	7.90	8.15	8.35	8.50	9.50	10.00	10.10	10.95	11.10
ENDURANCE	Ball Bearing Non-Skid	.....	qs16.75	.....	qs21.75	.....	qc25.00	.....	.....	.....	s33.00	qc34.00	c36.25	c38.00	.....	.....	.....	.....	qc47.25	qc49.50	c50.50	.....	c56.50	.....	c59.50	.....	.....
	Gray Tubes	3.45	3.60	3.85	4.05	4.20	4.25	4.60	4.80	5.50	5.50	5.60	5.70	5.95	6.15	6.15	7.30	7.30	7.35	7.55	7.70	7.85	9.10	9.30	9.30	10.50	10.65
	Red Tubes	3.85	3.90	4.35	4.90	5.00	5.10	5.75	6.00	6.15	6.15	6.40	6.60	6.80	7.25	7.25	8.35	8.35	8.55	8.75	8.95	9.20	10.30	10.65	10.65	11.75	12.10
	Durable Gray Tubes	3.10	3.20	3.45	3.65	3.75	3.80	4.15	4.30	4.90	4.90	5.10	5.20	5.35	5.55	5.55	6.60	6.60	6.65	6.75	6.90	7.10	8.10	8.40	8.40	9.40	9.55
	Durable Red Tubes	3.45	3.60	3.85	4.05	4.20	4.25	4.60	4.80	5.50	5.50	5.60	5.70	5.95	6.15	6.15	7.30	7.30	7.35	7.55	7.70	7.85	9.10	9.30	9.30	10.50	10.65
FALLS	Plain	22.50	23.60	.....	30.70	32.10	33.00	35.90	.....	.....	42.60	45.70	47.25	49.00	50.20	51.80	55.60	.....	59.10	60.20	62.50	64.45	75.45	77.05	78.60	.....	.....
	Ribbed and Neverslip Non-Skid	24.00	25.30	.....	32.80	34.40	35.30	38.50	.....	.....	45.40	48.90	50.25	51.85	53.25	54.85	58.30	60.50	62.50	63.80	44.70	68.00	79.65	81.30	82.90	98.50	99.50
	Extra Heavy Red Tubes	4.80	5.00	.....	6.80	7.05	7.20	7.50	.....	.....	8.95	9.20	9.45	9.70	9.90	10.20	11.25	11.50	11.85	12.15	12.45	12.75	13.95	14.30	14.55	16.40	17.10
FEDERAL	Plain	qs14.30	qs13.90	.....	qs18.05	qs19.10	s21.10	qc24.70	.....	.....	qs27.65	qc28.20	c29.60	c30.20	qc34.45	c32.20	.....	qc39.40	c40.65	c42.50	c43.20	c44.95	c48.50	.....	c51.45	.....	.....
	Traffik Tread	qs14.95	qs14.60	.....	qs18.90	qs20.00	s22.15	qc25.85	.....	.....	qs29.00	qc29.65	c30.90	c31.70	qc36.20	c33.80	.....	qc41.30	qc42.80	qc44.65	qc45.40	qc47.20	qc50.95	.....	c53.95	.....	.....
	Rugged Tread	qs16.85	qs16.40	.....	qs21.30	.....	s24.90	qc29.06	.....	.....	qs32.60	qc33.35	c34.75	c35.70	qc40.70	c38.00	.....	qc46.50	c48.15	c50.20	c51.05	c53.15	c57.30	.....	c60.70	.....	.....
	Gray Tubes	3.10	3.05	.....	3.75	3.80	3.95	4.70	.....	.....	4.85	5.05	5.05	5.30	5.65	5.65	.....	6.35	6.55	6.55	6.80	7.05	8.00	8.30	8.30	.....	.....
	Red Skin Tubes	3.70	3.45	.....	4.35	4.40	4.55	5.45	.....	.....	5.55	5.80	5.80	6.10	6.55	6.55	.....	7.25	7.50	7.50	7.85	8.10	9.20	9.50	9.50	.....	.....
FIRESTONE	Round Tread	13.50	14.00	18.25	17.90	19.55	21.10	23.80	30.00	31.90	27.85	28.35	30.00	30.45	31.65	37.90	39.80	40.85	41.75	43.25	43.95	53.75	50.90	51.75	53.65	83.20	89.25
	Non-Skid	15.15	15.70	20.75	19.95	21.35	23.60	26.95	34.20	37.50	31.30	32.05	33.90	34.50	36.30	43.40	44.55	46.35	46.75	48.60	49.15	60.00	59.95	61.05	63.10	95.30	101.35
	Gray Tubes	2.85	2.90	3.35	3.45	3.60	3.75	4.10	4.50	4.90	4.70	4.85	5.05	5.15	5.45	5.65	6.30	6.40	6.50	7.60	6.95	7.30	7.95	8.15	8.25	9.20	9.45
	Red Tubes	3.30	3.40	3.80	4.15	4.25	4.40	4.65	5.20	5.60	5.50	5.65	5.90	6.15	6.30	6.60	7.00	7.15	7.30	7.45	7.70	8.30	8.65	8.85	9.00	10.45	10.80
	Triple Tread	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	c47.85	c49.10	c50.45	.....	.....	c53.90	c55.30	c56.75	c58.15	c59.50	.....	c70.60	.....	c73.90	.....	.....
	F F Tread	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	c51.40	c42.75	c54.20	.....	.....	c57.85	c59.40	c60.95	c62.40	c63.95	.....	c75.80	.....	c79.45	.....	.....
	Red Tubes	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	7.15	6.30	7.45	.....	.....	8.30	8.45	8.65	8.85	9.00	.....	10.25	.....	10.80	.....	.....
FISK	Plain	qs13.80	qs13.40	qs17.90	17.45	qs18.35	20.40	23.80	s26.10	s32.30	s26.75	27.20	28.55	29.15	33.30	37.60	qc.....	qc38.05	39.30	41.10	41.75	c50.15	c46.90	53.10	49.65	.....	.....
	Gray and Black Non-Skid	qs14.50	qs14.10	.....	18.30	qs19.30	21.40	25.00	s.....	s33.95	s28.00	28.60	29.85	30.65	35.00	39.45	qc38.50	qc39.95	41.30	43.10	43.90	c52.65	c49.20	55.70	52.10	.....	.....
	Red Non-Skid	.....	qs18.30	.....	22.90	qs24.15	26.75	.....	.....	.....	s33.65	34.40	35.85	36.75	.....	47.35	qc46.15	qc47.90	49.60	51.80	52.60	c63.30	c59.10	66.90	62.50	.....	.....
	Gray Tubes	3.10	3.05	3.40	3.75	3.80	3.85	4.55	4.80	4.75	4.75	4.95	4.95	5.15	5.50	5.50	6.15	6.15	6.40	6.40	6.65	6.90	7.80	8.10	8.10	.....	.....
	Red Tubes	.....	3.45	.....	4.30	.....	4.40	5.20	.....	5.45	5.45	5.70	5.70	5.95	6.35	6.35	7.10	7.10	7.30	7.30	7.65	7.90	8.95	9.30	9.30	.....	.....

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Name	Trade Name and Tread	28x3	30x3	32x3	30x3½	31x3½	32x3½	34x3½	36x3½	30x4	31x4	32x4	33x4	34x4	35x4	36x4	32x4½	33x4½	34x4½	35x4½	36x4½	37x4½	35x5	36x5	37x5	37x5½	38x5½
G & J	Plain	13.25	13.80	.....	17.95	18.85	20.80	27.15	.....	.....	27.45	28.00	29.30	30.05	36.20	31.90	.....	.....	40.45	42.25	42.90	44.65	48.20	56.25	51.10	.....	.....
	Non-Skid	15.85	14.50	.....	18.80	19.80	21.85	28.45	.....	.....	28.80	29.35	30.80	31.50	38.00	33.50	.....	.....	42.45	44.35	45.05	46.85	50.60	59.05	53.70	.....	.....
	Gray Tubes	2.85	3.00	.....	3.75	3.85	4.00	4.30	.....	.....	4.85	5.00	5.15	5.25	5.45	5.65	.....	.....	6.45	6.60	6.85	7.10	8.00	8.15	8.30	.....	.....
	Red Tubes	3.65	3.75	.....	4.65	4.80	4.90	5.35	.....	.....	6.00	6.05	6.15	6.25	6.55	6.65	.....	.....	8.10	8.25	8.40	8.50	9.65	9.90	10.10	.....	.....
GENERAL	Plain	.....	16.90	.....	21.05	.....	26.20	29.45	.....	.....	34.20	34.70	36.80	37.45	38.85	39.40	.....	.....	46.10	48.30	50.25	53.45	59.40	61.00	61.30	.....	.....
	Non-Skid	18.35	19.55	.....	24.75	26.70	29.45	33.65	.....	.....	38.65	39.40	41.65	42.40	44.60	45.30	.....	52.20	53.65	56.45	57.25	59.70	66.70	69.45	70.40	.....	.....
	Gray Tubes	3.05	3.10	3.55	3.70	3.90	4.05	4.30	.....	.....	5.00	5.25	5.45	5.60	5.80	5.90	.....	6.90	7.00	7.20	7.55	7.70	8.30	8.50	8.75	.....	10.20
	Red Tubes	3.85	4.00	4.60	4.85	4.90	5.10	5.40	.....	.....	5.40	6.60	6.90	7.00	7.35	7.50	.....	8.35	8.50	8.70	9.00	9.20	10.25	10.30	10.55	.....	12.55
	Rib Tread	.....	.....	.....	.....	.....	qc37.60	.....	.....	.....	.....	qc47.85	qc49.10	qc50.45	.....	.....	.....	qc55.30	qc56.75	qc58.15	c59.50	.....	c70.60	.....	c73.90	.....	.....
	Non-Skid	.....	.....	.....	.....	.....	qc40.45	.....	.....	.....	.....	qc51.40	qc52.75	qc54.20	.....	.....	.....	qc59.40	qc60.95	qc62.40	c63.95	.....	c75.80	.....	c79.45	.....	.....
GILLETTE SAFETY	Plain	14.90	13.85	.....	17.95	.....	21.10	.....	.....	.....	28.20	28.70	30.05	30.50	.....	32.25	.....	.....	41.40	43.30	43.95	.....	50.70	56.25	52.35	.....	.....
	Ribbed	.....	15.60	.....	21.35	.....	24.10	.....	.....	.....	31.50	32.05	33.90	34.50	.....	36.90	.....	.....	46.80	48.65	49.20	.....	57.85	57.85	61.05	.....	.....
	5,000-Mile Non-Skid	18.35	19.50	.....	24.75	.....	29.45	.....	.....	.....	38.65	39.40	41.65	42.40	.....	45.30	.....	.....	56.20	59.15	60.00	.....	71.25	72.75	73.75	.....	.....
	Plain Cord	.....	.....	.....	35.20	.....	37.60	.....	.....	.....	46.20	47.85	49.10	50.45	.....	.....	53.90	55.30	56.75	58.15	59.50	.....	70.60	.....	73.90	.....	.....
	Non-Skid Cord	.....	.....	.....	39.65	.....	42.35	.....	.....	.....	52.05	53.85	55.30	56.75	.....	.....	60.65	62.20	63.85	65.40	67.00	.....	79.40	.....	83.20	.....	.....
	Gray Tubes	2.75	3.00	.....	3.75	.....	4.00	4.30	.....	.....	4.85	5.00	5.15	5.25	5.45	5.65	.....	.....	6.45	6.60	6.85	.....	8.00	8.15	8.30	.....	.....
	Hard Service Red Tubes	.....	3.70	.....	4.65	.....	4.90	5.35	.....	.....	6.00	6.05	6.15	6.30	6.55	6.55	.....	.....	8.10	8.25	8.40	.....	9.65	9.90	10.00	.....	.....
GLOBE	Plain	.....	s19.55	.....	25.45	s28.15	28.95	31.50	.....	.....	34.50	34.90	36.60	38.35	38.75	39.60	43.75	qc45.60	47.25	48.70	50.10	51.50	57.80	59.70	61.10	79.50	81.10
	Good Grip Non-Skid	.....	s22.25	.....	28.15	s30.75	32.45	36.25	.....	.....	38.10	38.75	40.45	41.20	42.90	43.25	47.50	qc50.80	53.05	56.15	59.55	61.60	66.50	67.85	72.60	90.65	97.25
	Red Tubes	3.50	3.65	.....	4.25	4.45	4.50	4.75	.....	.....	5.95	6.15	6.35	6.50	6.60	6.85	7.75	7.85	8.00	8.10	8.35	8.50	9.50	9.80	9.90	11.00	11.20
	Gray Tubes	3.05	3.25	.....	3.85	3.95	4.00	4.20	.....	.....	5.30	5.40	5.65	5.75	5.90	6.05	6.90	6.95	7.10	7.20	7.40	7.50	8.50	8.65	8.80	9.80	10.00
GOODRICH	Plain	13.80	13.40	17.95	17.45	18.35	20.40	23.80	25.30	28.35	26.75	27.25	28.55	29.15	33.30	34.20	37.00	38.05	39.25	41.10	41.75	47.80	46.90	53.10	49.65	74.55	67.30
	Safety Tread	14.45	14.10	18.80	18.25	19.30	21.45	24.95	26.50	29.70	28.00	28.60	29.85	20.65	35.00	35.90	38.90	39.95	41.30	43.10	43.90	50.20	49.25	55.70	52.15	78.20	70.70
	Gray Tubes	3.10	3.05	3.40	3.75	3.80	3.85	4.55	4.80	4.95	4.75	4.85	5.00	5.15	5.80	6.00	5.95	6.15	6.25	6.45	6.65	7.60	7.80	8.60	8.10	9.25	9.45
	Brown Tubes	3.40	3.35	3.80	4.20	4.25	4.30	5.05	5.35	5.50	5.30	5.40	5.55	5.70	6.45	6.60	6.60	6.80	7.00	7.15	7.35	8.35	8.70	9.50	8.95	10.30	10.50
	S. S. Silvertown Ribbed Tread	.....	.....	.....	.....	.....	37.60	.....	.....	.....	.....	47.85	49.10	50.45	.....	.....	53.90	55.30	56.75	58.15	59.50	.....	70.60	.....	73.90	.....	89.65
	Q. D. Silvertown Ribbed Tread	.....	.....	.....	.....	.....	39.35	.....	.....	.....	.....	50.05	51.35	52.75	.....	55.35	56.40	57.80	59.35	60.80	62.25	63.70	73.80	75.50	77.30	.....	93.70
	S. S. Silvertown Safety Tread	.....	.....	.....	.....	.....	39.50	.....	.....	.....	.....	50.25	51.60	53.00	.....	.....	56.65	58.10	59.60	61.05	62.50	.....	74.15	.....	77.60	.....	94.15
	Q. D. Silvertown Safety Tread	.....	.....	.....	.....	.....	41.30	.....	.....	.....	.....	52.60	53.95	55.40	.....	.....	59.25	60.70	62.30	.....	65.35	.....	77.50	.....	81.15	.....	98.40
GOODYEAR	Plain	.....	qs14.35	.....	q18.25	qs19.60	21.35	qc24.20	.....	.....	q28.45	c29.05	30.45	31.20	qc32.60	c33.10	qc38.85	qc40.05	41.35	c44.30	43.95	.....	c50.75	c51.55	c53.80	.....	.....
	All-Weather	.....	qs16.80	.....	q21.35	qs23.00	24.95	qc28.35	.....	.....	q33.40	c34.00	35.70	36.45	qc38.10	c38.70	qc45.45	qc46.90	48.40	c50.60	51.35	.....	c59.40	c60.30	c62.95	.....	.....
	Ribbed Tread Cord	.....	.....	.....	qc35.20	.....	qc37.60	qs40.05	.....	.....	qc46.20	qc47.85	qc49.10	qc50.45	.....	.....	qc53.90	qc53.30	c56.75	qc58.15	c58.50	.....	c70.60	.....	c73.90	.....	.....
	All-Weather Cord	.....	qs.....	.....	qc37.85	.....	qc30.45	qs43.05	.....	.....	qc49.65	qc51.40	qc52.75	qc54.20	.....	.....	qc57.90	qc59.40	c60.95	qc62.40	c63.95	.....	c75.80	.....	c79.45	.....	.....
	Unusual Sizes—Plain Tread	.....	.....	.....	.....	.....	.....	cs29.30	.....	.....	.....	qs34.90	.....	.....	cs39.15	qs39.75	.....	.....	.....	.....	.....	.....	.....	.....	.....	qs64.55	qc83.10	.....
	All-Weather	.....	.....	.....	.....	.....	.....	cs34.30	.....	.....	.....	qs40.85	.....	.....	cs45.80	qs46.50	.....	.....	.....	.....	.....	.....	.....	.....	.....	qs75.50	qc97.25	.....
	Regular Tubes	2.95	3.05	3.25	3.45	3.65	3.80	4.10	.....	.....	4.90	5.05	5.25	5.35	5.45	5.55	6.50	6.60	6.65	6.75	6.90	7.10	8.10	8.25	8.40	.....	.....
	Heavy Tourist Tubes	.....	3.15	.....	4.50	.....	4.95	5.35	.....	.....	6.40	6.60	6.75	6.95	.....	7.20	8.40	.....	8.65	8.80	8.95	9.25	10.50	10.75	10.95	11.70	11.90
GORDON	Lotraction Tread	.....	qs15.80	.....	qs20.20	.....	qc23.75	.....	.....	.....	qs31.30	qc31.95	qc33.50	qc34.30	.....	.....	.....	.....	.....	qc47.65	qc48.35	.....	qs56.85	.....	qs58.85	.....	.....
	Triangle Tread	qs15.60	qs16.75	.....	qs21.35	qs23.00	25.30	cs29.70	.....	.....	qs33.50	34.10	35.70	36.45	c38.10	39.75	.....	qc52.45	c48.40	49.95	50.50	c54.75	c57.70	cs58.50	61.10	.....	.....
	Gray Tubes	3.40	3.55	.....	4.05	4.30	4.45	4.80	.....	.....	5.75	5.95	6.10	6.25	6.35	6.50	.....	7.70	7.80	7.90	8.05	8.35	9.45	9.70	9.85	.....	.....
	Red Tubes	3.85	3.95	.....	4.50	4.75	4.95	5.35	.....	.....	6.40	6.60	6.75	6.95	7.05	7.20	.....	8.50	8.65	8.80	8.95	9.25	10.50	10.75	10.95	.....	.....
GRYPHON	Ribbed Skid	.....	s21.25	.....	s26.50	s27.50	30.50	.....	.....	.....	s36.75	38.00	39.25	40.50	42.00	44.50	.....	.....	47.75	50.75	55.25	56.50	63.00	65.50	67.00	.....	.....
	Non-Skid	.....	s22.25	.....	s28.00	s29.00	32.00	.....	.....	.....	s38.75	40.00	41.25	42.50	44.00	46.50	.....	.....	50.00	53.00	57.50	58.75	65.50	68.00	69.50	.....	.....
	Gray Tubes and Red Tubes	.....	3.50	.....	4.50	4.75	5.00	5.25	.....	.....	5.50	5.75	6.00	6.25	6.50	6.75	.....	7.50	7.75	8.00	8.25	8.50	9.25	9.50	9.75	.....	.....
HAMILTON	Cable Tread	s14.80	s15.85	.....	s20.50	s21.60	23.55	26.60	s28.20	s29.80	s31.50	32.10	33.70	34.35	36.10	36.70	38.30	s43.80	45.75	47.80	48.50	50.55	58.15	59.00	61.30	.....	77.90
	Pure Gum Tubes	2.85	2.90	.....	3.45	3.60	3.75	3.95	4.35	4.90	4.60	4.85	5.05	5.20	5.35	5.45	.....	.....	6.50	6.70	6.95	7.10	7.70	7.90	8.15	.....	9.45
	Perfection Pink Tubes	3.30	3.40	.....	4.15	4.25	4.40	4.65	4.95	5.60	5.50	5.65	5.90	6.15	6.30	6.45	.....	.....	7.30	7.45	7.70	7.85	8.65	8.85	9.00	.....	10.80
HARDMAN SENIOR	Plain	.....	s18.00	s19.00	s22.50	s24.00	25.75	28.00	.....	.....	s31.00	32.00	35.00	37.00	38.00	40.00	42.00	43.50	45.00	47.00	49.00	51.00	54.50	s56.00	s58.00	s77.00	s80.00
	Sure Grip Non-Skid	.....	s21.25	s24.35	s26.75	s27.50	30.00	32.50	.....	.....	s37.00	39.00	40.25	41.50	42.50	44.00	46.00	47.50	49.75	53.00	56.75	58.00	64.50	s67.00	69.00	s86.00	s91.00
	Red Tubes	.....	3.95	4.35	5.00	5.10	5.25	5.85	.....	.....	6.30	6.50	6.75	6.95	7.30	7.40	8.40	8.50	8.70	8.90	9.20	9.35	10.45	10.75	10.90	12.50	12.75
JUNIOR	Plain	.....	13.75	.....	18.50	19.50	20.75	23.50	.....	.....	25.25	26.75	28.50	29.50	31.75	33.25	38.50	39.50	41.00	42.00	43.75	45.50	49.25	51.00	53.00	.....	.....
	Non-Skid	.....	15.00	.....	19.50	20.50	22.00	25.00	.....	.....	27.00	28.00	29.50	31.00	33.00	34.50	40.00	41.00	42.50	43.50	45.00	47.00	51.00	52.75	55.00	.....	.....
	Gray Tubes	.....	3.75	.....	4.30	4.40	4.50	4.85	.....	.....	5.75	5.85	6.00	6.20	6.40	6.45	7.55	7.60	7.70	7.85	8.05	8.20	9.35	9.50	9.60	.....	.....
HARTFORD	Plain	13.25	13.80	.....	17.95	18.85	20.80	27.15	.....	.....	27.45	28.00	29.30	30.05	36.20	31.90	.....	.....	40.45	42.25	42.90	44.65	48.20	56.25	51.10	.....	.....
	Hartford Anti-Skid	15.25	14.50	.....	18.80	10.80	21.85	28.45	.....	.....	28.85	29.35	20.80	31.50	28.00	33.50	.....	.....	42.45	44.35	45.05	46.85	50.60	59.05	53.70	.....	.....
	Gray Tubes	2.85	3.00	.....	3.75	3.85	4.00	4.30	.....	.....	4.85	5.00	5.15	5.25	5.45	5.65	.....	.....	6.45	6.60	6.85	7.10	8.00	8.15	8.30	.....	.....
	Red Tubes	3.65	3.75	.....	4.65	4.80	4.90	5.35	.....	.....	6.00	6.05	6.15	6.25	6.55	6.65	.....	.....	8.10	8.25	8.40	8.50	9.65	9.90	10.10	.....	.....
HAWKEYE	Plain	13.42	14.47	.....	17.88	.....	21.12	.....	.....	.....	27.83	29.15	30.80	31.30	.....	33.28	.....	40.70	41.53	43.34	44.06	45.93	50.38	51.32	53.13	.....	.....
	Non-Skid	14.80	15.90	.....	19.97	.....	23.60	.....	.....	.....	31.52	32.12	33.83	34.54	.....	36.69	.....	44.39	45.49	47.41	47.91	49.72	55.88	56.82	58.53	.....	.....
	Ribbed Tread Non-Skid	19.47	20.96	.....	26.57	.....	30.75	.....	.....	.....	40.70	41.53	43.78	44.61	.....	46.59	.....	51.81	54.07	57.09	61.77	62.76	68.81	71.83	73.48	.....	.....
	Red Tubes	3.25	3.35	.....	3.85	4.30	4.05	4.25	.....	.....	5.40	5.50	5.75	5.90	6.00	6.10	.....	7.15	7.20	7.30	7.50	7.70	8.60	8.80	8.90	.....	.....
	Gray Tubes	2.80	2.90	.....	3.45	3.50	3.55	3.80	.....	.....	4.80	4.90	5.05	5.20	5.35	5.45	.....	6.40	6.45	6.55	6.65	6.75	7.70	7.80	8.00	.....	.....
HENDRIE	Plain	16.10	16.65	18.00	19.90	21.30	22.30	24.95	.....	29.00	29.55	30.65	31.35	32.05	33.15	33.40	40.70	41.45	42.15	43.80	44.35	45.85	52.35	53.50	56.75	69.60	72.20
	Non-Skid	19.20	20.20	21.30	24.15	24.70	26.75	29.25	.....	33.05	34.20	35.10	36.25	37.05	38.05	38.65	46.55	47.25	48.05	51.60	55.30	54.20	61.90	62.45	63.75	78.40	85.25
	California Non-Skid	22.05	23.15	24.40	27.80	28.35	31.90	33.60	.....	37.95	39.35	40.30	41.70	42.55	43.85	44.50	53.50	54.40	55.20	59.30	60.10	62.95	71.10	71.70	73.30	10.15	98.00
	Hendrie Gray Tube	3.45	3.65	4.05	4.25	4.40	4.45	4.75	.....	5.80	5.90	6.05	6.25	6.45	6.55	6.70	7.65	7.80	7.85	8.00	8.25	8.35	9.40	9.65	9.80	10.80	11.00
	California Red Tube	4.35	4.40	4.50	5.30	5.35	5.40	5.70	.....	6.70	6.90	7.00	7.15	7.30	7.45	7.60	9.20	9.40	9.65	9.85	10.05	10.30	11.65	11.75	12.00	12.60	12.75
HIGHWAY	Non-Skid	qs14.85	qs14.30	.....	qs18.35	.....	c21.75	.....	.....	.....	qs28.50	qc29.20	c30.40	c31.25	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

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TIRES AND TUBES—Continued

Name	Trade Name and Tread	28x3	30x3	32x3	30x3½	31x3½	32x3½	34x3½	36x3½	30x4	31x4	32x4	33x4	34x4	35x4	36x4	32x4½	33x4½	34x4½	35x4½	36x4½	37x4½	35x5	36x5	37x5	37x5½	38x5½
HIGHWAY (Continued)	Red Tubes	3.50	3.40	3.80	4.20	4.25	4.35	4.65	4.95	5.35	5.50	5.60	5.85	6.10	6.25	6.35	.....	.....	7.30	7.40	7.50	7.75	8.90	9.20	9.00	.....	.....
	Gray Tubes	3.10	3.05	3.50	3.55	3.85	3.95	4.55	4.70	4.95	4.75	4.85	5.00	5.20	5.70	5.45	.....	.....	6.45	6.55	6.70	7.00	8.00	8.50	8.20	.....	.....
HOOD	Plain	qs18.80	qs19.20	qs20.70	25.50	qs27.25	28.65	c30.65	.....	.....	qs33.50	34.10	34.75	35.65	36.65	37.65	sc50.00	c47.20	49.10	50.35	51.35	c52.50	c62.00	s63.25	64.25	cs82.50	cs83.25
	Arrow Non-Skid	22.50	23.00	25.00	29.50	31.90	33.15	35.50	.....	.....	39.75	40.60	41.70	42.50	44.50	46.75	55.50	56.30	56.90	58.10	58.75	59.75	68.60	69.60	70.90	87.50	91.50
	Puritan Plain	.....	qs15.20	.....	qs17.10	qs18.50	19.50	c22.00	.....	.....	qs27.50	c28.25	c29.00	c29.65	cs30.75	c31.85	.....	c36.85	c37.95	c39.35	c40.00	c41.55	c47.30	cs48.95	cs49.70	.....	.....
	Puritan Gripper Non-Skid	.....	17.20	.....	19.70	21.20	22.75	26.00	.....	.....	32.10	32.50	32.90	33.50	34.25	35.50	.....	43.45	44.40	45.90	46.50	47.85	55.70	57.40	58.50	.....	.....
	Hood Red and Gray Tubes	3.85	4.00	4.50	4.75	4.90	4.95	5.20	.....	5.80	5.90	6.00	6.10	6.25	6.40	6.55	7.65	7.80	7.95	8.10	8.35	8.60	9.45	9.60	9.75	11.20	11.75
	Puritan Red and Gray Tubes	3.40	3.45	.....	4.05	4.20	4.40	4.80	5.20	5.40	5.15	5.25	5.35	5.50	5.90	6.30	6.85	6.95	7.05	7.15	7.25	7.60	8.30	8.45	8.60	10.00	11.00
HOWE	Ribbed Tread	.....	qs18.80	.....	qs22.50	.....	.....	.....	.....	.....	qs32.50	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Non-Skid	qs19.20	.....	.....	.....	.....	29.40	.....	.....	.....	.....	c36.80	c37.75	c39.00	cs40.50	c42.80	.....	qc46.25	c48.20	c50.25	c52.80	cs54.05	c60.00	cs62.50	c63.95	.....	.....
	Gray Tubes	2.90	3.00	3.20	3.50	3.60	3.75	3.95	4.25	4.70	4.75	4.85	5.00	5.15	5.40	5.50	6.10	6.15	6.25	6.45	6.65	6.90	7.80	8.00	8.10	9.20	9.45
	Red Tubes	3.55	3.65	3.80	4.35	4.40	4.55	4.80	5.00	5.55	5.65	5.80	5.90	6.00	6.20	6.30	7.65	7.80	8.00	8.25	8.35	8.55	9.70	10.10	10.25	10.85	11.00
INDIANA	Plain	c12.25	c12.75	16.60	16.25	17.75	19.20	21.65	.....	.....	25.30	25.75	27.25	27.70	28.75	29.25	.....	37.15	37.95	39.30	39.95	41.55	46.25	47.05	48.75	.....	.....
	Button and Traction Non-Skid	c13.75	c14.25	18.85	18.15	19.40	21.45	24.50	.....	.....	28.65	29.15	30.80	31.35	33.00	33.55	.....	42.15	42.50	44.20	44.70	46.40	54.50	55.50	57.35	.....	.....
	Gray Tubes	2.85	2.90	3.35	3.45	3.60	3.75	3.95	.....	.....	4.60	4.85	5.05	5.20	5.35	5.45	.....	6.40	6.50	6.70	6.95	7.10	7.70	7.90	8.15	.....	.....
	Brown Tubes	3.30	3.40	3.80	4.15	4.25	4.40	4.65	.....	.....	5.50	5.65	5.90	6.15	6.30	6.45	.....	7.15	7.30	7.45	7.70	7.85	8.65	8.85	9.00	.....	.....
KELLY-SPRINGFIELD	Plain	qs19.70	qs18.85	.....	22.90	s25.40	26.90	29.25	s37.80	s40.45	s31.50	32.65	33.90	35.05	36.10	37.20	50.60	s41.70	43.15	44.45	45.70	46.90	53.05	54.60	55.95	s72.95	s83.80
	Driving Tread	.....	.....	.....	.....	.....	.....	.....	.....	.....	qs38.30	c39.35	c40.45	c41.60	c43.80	c45.95	.....	c48.10	c49.90	c52.25	c57.55	c58.60	c65.00	c68.00	c69.25	.....	cs90.55
	Kant Slip Non-Skid	qs23.90	qs22.50	.....	qs28.15	qs29.05	32.15	c34.90	.....	.....	s38.85	c40.10	c41.30	c42.75	c44.15	c46.60	.....	c48.35	c50.10	c53.10	c57.65	c58.85	c65.55	68.10	69.70	cs86.70	cs100.85
	Gray and Red Tubes	3.45	3.55	3.80	4.55	4.70	4.90	5.20	5.55	5.65	5.80	5.90	6.10	6.30	6.40	6.55	7.40	7.65	7.90	8.05	8.35	8.60	9.45	9.65	10.00	11.45	11.65
KNIGHT	Blackstone	.....	14.25	.....	18.15	19.40	21.45	30.40	.....	.....	28.65	29.15	30.80	31.35	.....	33.55	.....	42.15	42.50	44.20	44.70	.....	.....	.....	57.35	10.50	12.00
	Knight Plain	.....	20.50	.....	25.40	27.30	28.00	30.40	.....	.....	33.80	34.95	36.00	37.30	.....	39.30	.....	43.10	44.30	45.45	47.45	49.55	55.45	56.60	58.85	.....	.....
	Non-Skid	.....	22.50	.....	28.15	29.05	32.15	.....	.....	.....	38.85	40.10	41.30	42.75	.....	46.60	.....	48.35	50.10	53.10	57.65	58.85	65.55	68.10	69.70	86.70	92.85
	Blackstone Tubes	.....	3.10	.....	3.60	3.75	3.80	4.05	.....	.....	4.80	4.95	5.10	5.30	.....	5.55	.....	6.35	6.40	6.60	6.70	6.90	7.75	7.90	8.05	.....	.....
	Knight Tubes	.....	3.65	.....	4.65	4.85	5.00	5.40	.....	.....	5.80	6.00	6.25	6.50	6.75	7.00	.....	7.90	8.10	8.30	8.60	9.00	9.40	9.80	10.10	11.50	13.00
KOKOMO	Plain	qs16.20	qs16.85	.....	qs21.90	.....	q25.30	.....	.....	.....	qs33.40	qc34.15	c35.80	c36.55	.....	c39.05	.....	.....	c49.30	c51.50	c52.40	c54.50	.....	.....	c62.25	.....	.....
	Gridiron Non-Skid	qs17.00	qs17.70	.....	qs22.90	.....	q26.85	.....	.....	.....	qs35.20	qc35.95	c37.50	c38.40	.....	c40.95	.....	.....	c51.85	c54.15	c54.90	c57.20	.....	.....	c65.40	.....	.....
	Standard Gray Tubes	3.20	3.40	3.60	4.00	4.20	4.25	4.50	4.75	.....	5.25	5.35	5.55	5.70	5.90	6.05	.....	.....	6.90	7.15	7.35	7.60	8.65	9.00	9.25	9.75	.....
	Standard Red Tubes	3.60	3.70	3.90	4.50	4.70	4.75	5.00	5.25	.....	5.85	6.00	6.10	6.30	6.60	6.75	.....	.....	7.75	7.90	8.15	8.45	9.60	9.75	10.00	10.80	.....
	Everlast Gray Tubes	3.85	3.95	4.40	4.75	4.95	5.00	4.55	5.65	.....	6.20	6.30	6.50	6.70	6.90	7.15	.....	.....	8.15	8.40	8.65	8.95	10.15	10.35	10.55	12.05	.....
	Everlast Red Tubes	4.20	4.35	4.95	5.35	5.50	5.60	5.85	6.25	.....	6.90	7.00	7.20	7.40	7.65	7.95	.....	.....	9.10	9.30	9.55	9.95	11.30	11.35	11.65	13.40	.....
LEE	Standard Plain	15.75	14.25	19.00	18.30	19.40	21.45	26.75	30.25	33.00	28.10	29.00	30.00	31.05	35.55	34.20	40.70	40.50	41.70	43.15	43.85	46.65	50.90	51.75	53.65	73.05	73.80
	Standard Non-Skid	16.50	15.70	21.70	20.15	21.35	23.60	29.85	33.40	36.50	30.90	31.90	33.00	34.15	39.35	37.60	44.10	44.55	45.85	47.45	48.25	51.30	56.00	56.80	59.00	88.00	88.75
	Puncture Proof Plain	26.95	26.90	26.80	33.60	34.50	35.75	40.85	43.25	43.65	41.05	44.75	46.80	48.35	52.85	53.75	53.25	54.35	56.75	58.85	60.05	62.25	71.45	72.50	73.50	81.60	83.85
	Puncture Proof Non-Skid	29.60	28.25	33.20	34.70	35.90	37.85	44.45	46.75	47.95	43.35	47.75	50.05	51.35	57.90	58.65	61.40	59.20	60.90	63.10	64.85	70.05	76.55	77.90	79.65	95.65	98.00
	Gray Tubes	3.10	3.05	3.40	3.75	4.00	4.10	4.55	4.80	4.95	5.00	5.10	8.25	5.40	5.80	6.00	6.50	6.15	6.25	6.45	6.65	6.90	7.80	7.95	8.10	9.25	9.45
	Red Tubes	3.40	3.35	3.80	4.20	4.35	4.45	5.05	5.35	5.50	5.45	5.55	5.70	5.90	6.45	6.50	7.20	6.80	7.00	7.15	7.35	7.65	8.70	8.85	8.95	10.30	10.50
McCREARY	Plain	14.75	15.35	18.90	19.15	22.20	23.80	27.05	.....	.....	31.10	31.55	33.45	34.05	.....	35.80	.....	42.50	43.90	46.00	46.55	48.60	57.65	.....	59.60	.....	.....
	Non-Skid	16.70	17.75	.....	22.50	24.25	26.75	30.60	.....	.....	35.15	35.80	37.85	38.55	.....	41.20	.....	49.70	51.10	53.75	54.55	56.85	64.75	.....	67.05	.....	.....
	Gray	3.05	3.10	3.55	3.70	3.90	4.05	4.30	.....	.....	5.00	5.25	5.45	5.60	.....	5.90	.....	6.90	7.00	7.20	7.55	7.70	8.30	.....	8.75	.....	.....
	Red	3.85	4.00	4.60	4.85	4.90	5.10	5.40	.....	.....	6.40	6.60	6.90	7.00	.....	7.50	.....	8.35	8.50	8.70	9.00	9.20	10.25	.....	10.55	.....	.....
McGRAW	Congress Plain	qs13.90	qs13.65	qs18.15	17.90	qs18.60	20.80	24.15	.....	qs29.00	c27.15	27.95	29.15	29.70	33.70	31.75	.....	.....	39.75	41.70	42.35	43.60	47.70	53.15	50.50	.....	.....
	Congress Non-Skid	qs14.85	qs14.30	.....	18.35	qs19.70	21.75	25.80	.....	qs30.20	c28.50	29.20	30.40	31.35	35.35	33.10	.....	qc40.45	42.00	43.55	44.45	46.05	50.05	56.55	52.95	.....	.....
	Imperial Plain	qs13.90	qs13.65	qs18.15	17.90	qs18.60	20.80	24.15	qs27.70	qs29.00	c27.15	27.95	29.15	29.70	33.70	31.75	qs40.70	q.....	39.75	41.70	42.35	43.60	47.70	53.15	50.50	.....	.....
	Imperial Non-Skid	qs14.85	qs14.30	.....	18.35	qs19.70	21.75	25.80	.....	qs30.20	c28.50	29.20	30.40	31.35	35.35	33.10	qs42.90	qc40.45	42.00	43.55	44.45	46.05	50.05	56.55	52.95	.....	.....
	McGraw Plain	qs13.90	qs13.65	qs18.15	17.90	qs18.60	20.80	24.15	qs27.70	qs29.00	c27.15	27.95	29.15	29.70	33.70	31.75	qs40.70	.....	39.75	41.70	42.35	43.60	47.70	53.15	50.50	.....	.....
	McGraw Non-Skid	qs14.85	qs14.30	.....	18.35	19.70	21.75	25.80	.....	qs30.20	c28.50	29.20	30.40	31.35	35.35	33.10	.....	qc40.45	42.00	43.55	44.45	46.05	50.05	56.55	52.95	.....	.....
	Pullman Plain	qs13.90	qs13.65	qs18.15	17.90	qs18.60	20.80	24.15	qs27.70	qs29.00	c27.15	27.95	29.15	29.70	33.70	31.75	qs40.70	.....	39.75	41.70	42.35	43.60	47.70	53.15	50.50	.....	.....
	Pullman Non-Skid	qs14.85	qs14.30	.....	18.35	19.70	21.75	25.80	.....	qs30.20	c28.50	29.20	30.40	31.35	35.35	33.10	.....	qc40.45	42.00	43.55	44.45	46.05	50.05	56.55	52.95	.....	.....
	Red Tubes	3.50	3.40	3.80	4.20	4.25	4.35	4.65	4.95	5.35	5.50	5.60	5.85	6.10	6.25	6.35	7.10	7.15	7.30	7.40	7.50	7.75	8.90	9.20	9.00	.....	.....
	Gray Tubes	3.10	3.05	3.50	3.55	3.85	3.95	4.55	4.70	4.95	4.75	4.85	5.00	5.20	5.70	5.45	6.50	6.30	6.45	6.55	6.70	7.00	8.00	8.50	8.20	.....	.....
McNAULL		.....	.....	.....	.....	.....	.....	.....	.....	.....	32.83	.....	42.69	.....	.....	.....	.....	54.71	.....	58.06	.....	62.42	70.65	74.44	74.44	.....	100.57
	Tubes	.....	3.90	.....	5.00	.....	5.39	5.75	.....	.....	6.38	6.49	6.71	6.93	7.04	7.20	.....	8.42	8.69	8.85	9.18	9.46	10.39	10.61	11.00	12.59	12.81
MANSFIELD	Plain	14.75	14.45	18.95	19.40	20.95	22.15	25.75	.....	26.55	27.90	29.60	30.00	31.05	35.00	33.00	.....	.....	41.80	43.12	44.35	45.60	50.20	58.10	52.25	.....	.....
	No-Skid	16.25	15.90	.....	21.35	23.15	24.45	28.35	.....	.....	30.80	32.60	33.00	34.10	38.50	36.30	.....	.....	46.00	47.45	48.75	50.20	55.30	.....	59.05	.....	.....
	Gray Tubes	3.00	3.05	3.55	3.75	3.90	4.10	4.75	.....	5.20	4.85	5.00	5.20	5.40	5.90	5.70	.....	.....	6.50	6.60	6.85	7.05	8.05	8.60	8.30	.....	.....
	Red Tubes	3.70	.....	.....	4.40	4.60	4.80	5.50	.....	6.20	5.90	6.05	6.20	6.35	7.00	6.80	.....	.....	7.95	8.10	8.30	8.55	9.60	10.30	9.90	.....	.....
MARATHON	Runner	qs14.00	qs14.90	qs19.00	.....	qs19.60	22.25	c25.20	.....	.....	qs29.60	c30.55	c31.50	c32.45	c33.45	c34.45	qc40.55	.....	c43.25	c44.40	c45.70	c47.70	c56.55	c58.15	c59.80	cs77.95	cs80.05
	Angle Non-Skid	qs14.75	qs15.70	qs20.00	.....	qs20.65	23.40	c26.50	.....	.....	qs31.15	c32.15	c33.15	c34.15	c35.20	c36.25	qc42.70	c44.10	c45.50	c46.75	c48.10	c50.20	c59.50	c61.20	c62.95	cs88.05	cs84.25
	Heavy Red Tube	3.10	3.30	4.15	.....	4.30	4.45	4.80	.....	.....	5.55	5.70	5.90	6.05	6.20	6.40	7.45	7.65	7.85	8.10	8.30	8.50	9.50	9.80	10.05	11.25	11.60
	Gray Tube	2.80	3.05	3.75	.....	3.90	4.05	4.40	.....	.....	5.00	5.15	5.35	5.50	5.65	5.85	6.60	6.80	7.05	7.25	7.50	7.70	8.50	8.80	9.05	10.15	10.50
	Cord Runner	.....	.....	qs28.80	.....	qs29.65	30.80	.....	.....	.....	qs37.80	c39.15	c40.20	c41.25 c	.....	.....	qc44.10	c45.25	c46.45	c47.60	c48.70	.....	c57.80 c	.....	c60.50	.....	cs73.35
	Cord Angle Non-Skid	.....	.....	qs32.45	.....	qs33.25	34.65	.....	.....	.....	qs42.60	c44.05	c45.25	c36.45 c	.....	.....	qc49.65	c50.90	c52.25	c53.50	c54.80	.....	c65.00	.....	c68.10	.....	cs82.55
MARION	Plain	qs13.20	qs14.30	.....	qs18.05	c20.00	c22.00	.....	.....	.....	qs28.60 c	.....	c30.80	c32.55	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Non-Skid	qs14.95	qs15.95	.....	qs20.40	.....	c23.90	.....	.....	.....	qs30.80	c31.50	c33.50	c34.25	c35.90	c36.50	.....	.....	c46.00	c47.30	c47.85	c49.50	c55.00	c56.65	c58.30	.....	.....
	Gray	2.90	3.00	.....	3.60	3.70	3.75	.....	.....	.....	4.75	5.00	5.20	5.30	5.45	5.55	.....	.....	6.40	6.60	6.75	7.10	8.10	8.20	8.25	.....	.....
	Red	.....	3.80	.....	4.50	4.75	4.85	.....	.....	.....	5.20	6.25	6.50	6.65	6.90	7.10	.....	.....	7.80	8.40	8.60	9.25	9.50	9.70	9.90	.....	.....
MASON	Plain Tread	14.10	14.90	.....	19.00	20.40	22.15	.....	.....	.....	29.10	29.60	31.35	31.85	.....	33.65	40.85	.....	41.75	43.25	43.95	45.70	50.90	51.75	53.65	.....	.....
	Ribbed Tread	14.85	15.95	.....	20.35	21.95	23.95	27.25	.....	.....	30.20	30.70	32.60	33.10	34.95	35.35	44.50	.....	45.05	46.80	47.45	49.25	56.10	57.95	59.95	.....	.....
	Non-Skid	15.40	16.50	.....	21.20	22.65	24.80	28.05	.....	.....	31.50	32.05	33.90	34.50	36.30	36.90	46.35	.....	46.75	48.60	49.15	51.05	59.95	61.05	63.10	.....	.....
	Gray Tubes	3.15	3.20	.....	3.80	3.95	4.15	4.35	.....	.....	5.05	5.35	5.55	5.70	5.90	6.00	7.05	.....	7.15	7.35	7.65	7.80	8.50	8.70	8.95	.....	.....
	Red Tubes	3.65	3.75	.....	4.55	4.70	4.85	5.10	.....	.....	6.05	6.20	6.60	6.75	6.95	7.10	7.85	.....	8.05	8.20	8.45	8.65	9.50	9.75	9.90	.....	.....

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Name	Trade Name and Tread	28x3	30x3	32x3	30x3½	31x3½	32x3½	34x3½	36x3½	30x4	31x4	32x4	33x4	34x4	35x4	36x4	32x4½	33x4½	34x4½	35x4½	36x4½	37x4½	35x5	36x5	37x5	37x5½	38x5½
MATTSON	Plain	s12.04	s13.15	s14.25	16.43	s17.54	18.65	19.73	.....	s21.91	23.02	24.10	25.20	26.30	27.41	28.49	.....	.....	31.28	32.35	33.41	34.52	s38.24	39.42	40.55	.....	.....
	Non-Skid	s12.64	s13.79	s14.96	17.25	s18.41	19.56	20.71	.....	s23.00	24.16	25.31	26.46	27.62	28.77	29.91	.....	.....	32.79	33.97	35.08	36.25	s40.26	41.42	42.58	.....	.....
	Gray Tubes	3.00	3.05	3.35	3.65	3.75	4.00	4.05	.....	4.20	4.55	4.80	5.00	5.15	5.15	5.20	.....	.....	5.35	5.50	5.95	6.30	6.50	6.65	6.90	.....	.....
MICHELIN	Plain Tread	qs14.95	qs15.60	.....	qs21.50	qs22.60	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Universal Tread	.....	.....	.....	s22.50	.....	c25.40	c27.10	.....	.....	s31.50	c35.15	c35.40	c36.65	cs38.25	c39.80	qc44.75	.....	c47.60	c50.10	c51.15	cs52.95	c58.40	cs59.80	c60.50	.....	.....
	Tubes	3.55	3.70	.....	.....	3.70	4.40	4.80	.....	5.55	5.10	5.80	5.30	6.20	5.60	6.65	7.60	6.80	8.00	7.20	8.45	7.70	9.70	10.10	10.25	11.30	11.30
MOHAWK	Plain	qs18.70	qs19.65	.....	24.00	qs26.55	28.05	c30.65	.....	.....	qs35.35	c36.50	37.55	38.90	c40.20	42.45	.....	c45.70	47.85	49.85	52.60	c53.80	c59.65	s62.00	c63.45	cs78.95	.....
	Non-Skid	qs22.55	qs23.70	.....	20.00	qs31.10	34.45	c37.55	.....	.....	qs41.60	43.10	c44.20	45.90	c47.45	50.15	.....	c54.05	56.45	58.90	61.85	c63.35	c70.35	s73.35	75.00	cs93.10	cs96.65
	Ribbed Tread	.....	qs21.10	.....	qs25.95	.....	qc30.35	.....	.....	.....	qs38.45	qc39.65	qc40.85	c42.05	.....	.....	.....	.....	c51.65	qc53.85	c56.95	.....	.....	c64.90	.....	c68.45	.....
	Pure Gum and Red Tubes	3.40	3.55	.....	4.55	4.70	4.90	5.20	.....	.....	5.75	5.85	6.10	6.25	6.35	6.55	7.35	7.65	7.85	8.00	8.25	8.60	9.35	9.65	9.95	11.40	11.60
MONARCH	Gray Tubes	3.15	3.35	.....	4.15	4.20	4.25	.....	.....	.....	5.25	5.35	5.50	5.65	.....	6.10	.....	6.80	6.90	7.15	7.35	7.60	8.60	8.70	8.95	.....	.....
	Red Tubes	3.45	3.70	.....	4.65	4.70	4.75	.....	.....	.....	5.85	5.95	6.10	6.30	.....	6.75	.....	7.50	7.75	7.90	8.10	8.45	9.60	9.75	9.85	.....	.....
NABOB	Plain	qs19.70	qs18.85	.....	s22.90	qs25.40	26.90	c29.25	.....	.....	q31.50	c32.65	c33.90	c35.05	c36.10	c37.20	.....	c41.70	c43.15	c44.45	c45.70	c46.90	c53.05	c54.60	c55.95	c72.95	cs83.85
	Safety Traction Non-Skid	.....	qs22.50	.....	s28.15	qs29.05	32.15	c34.90	.....	.....	q38.85	c40.10	c41.30	c42.75	c44.15	c46.60	.....	c48.35	c50.10	c53.10	c57.65	c58.85	c65.55	c68.10	c69.70	c86.70	cs100.80
	Red Tubes	3.45	3.55	.....	4.55	4.70	4.90	5.20	.....	.....	5.80	5.90	6.10	6.30	6.40	6.55	.....	7.65	7.90	8.05	8.35	8.60	9.45	9.65	10.00	11.45	11.65
NASSAU	Plain	12.85	13.20	14.60	17.10	18.25	19.95	23.05	22.90	24.75	26.25	26.25	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Non-Skid	14.40	14.85	16.50	18.65	20.70	22.40	26.05	23.60	27.90	29.50	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Nassau Gray Tubes	3.20	3.15	3.45	3.85	3.90	3.95	4.60	4.90	5.05	4.85	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
NATIONAL	Plain	11.75	11.40	15.25	14.85	15.60	17.35	20.25	.....	.....	22.75	23.10	24.30	24.80	28.25	26.40	.....	32.35	33.35	34.95	35.50	36.95	39.85	45.10	42.20	.....	.....
	Non-Skid	12.30	12.00	16.00	15.50	16.40	18.20	21.25	.....	.....	23.80	24.30	25.40	26.05	29.75	27.70	.....	34.00	35.10	36.65	37.30	38.75	41.80	47.35	44.35	.....	.....
	Red Tubes	3.40	3.35	3.80	4.20	4.25	4.30	5.05	.....	.....	5.30	5.40	5.55	5.70	6.45	6.10	.....	6.80	7.00	7.15	7.35	7.65	8.70	9.50	8.95	.....	.....
NEEDHAM	Plain	qs12.00	qs13.00	.....	16.50	17.50	19.25	c21.65	.....	.....	25.75	c26.35	c27.65	c28.15	c29.30	c29.75	.....	c36.25	c37.50	c39.20	c39.70	c41.20	c44.60	c45.20	c46.90	cs64.95	cs66.55
	Non-Skid	.....	.....	.....	19.00	19.90	22.10	c24.75	.....	.....	29.85	c30.30	c31.70	c32.25	c33.60	c34.05	.....	c42.30	c43.20	c44.95	c45.45	c47.20	c51.10	c51.75	c53.75	cs74.40	cs76.25
	Tubes	2.80	2.90	.....	3.30	3.40	3.45	3.60	.....	.....	4.55	4.70	4.85	4.95	5.05	5.15	.....	6.10	6.20	6.30	6.40	6.60	7.55	7.70	7.85	8.45	8.55
NEWCASTLE	Plain	.....	14.75	.....	18.90	21.10	21.65	23.50	.....	.....	.....	26.25	27.20	28.15	29.00	29.95	.....	.....	36.50	37.60	38.65	39.70	44.85	46.15	47.35	.....	.....
	Non-Skid	.....	16.30	.....	21.25	23.90	24.50	26.60	.....	.....	29.55	30.60	31.50	32.65	33.45	34.40	.....	.....	38.15	39.35	42.70	43.55	48.50	49.55	53.00	.....	.....
	Shenango Non-Skid	.....	.....	.....	28.15	.....	32.15	qc23.15	.....	.....	.....	.....	c41.30	c47.25	.....	.....	.....	.....	.....	c53.10	c57.65	.....	c65.55	.....	cs58.90	c69.70	.....
	Pure Gum Gray Tubes	.....	3.20	.....	4.10	4.25	s4.40	4.70	.....	.....	5.20	5.30	5.50	5.65	5.75	5.90	.....	.....	7.10	7.25	7.50	7.75	8.50	8.70	9.00	.....	.....
	Newcastle	.....	s19.65	.....	s25.45	.....	.....	.....	.....	.....	.....	.....	.....	cs40.75	.....	.....	.....	.....	.....	.....	cs54.80	.....	.....	.....	cs63.85	.....	.....
NORWALK	Plain	.....	s19.65	.....	s25.45	.....	.....	.....	.....	.....	.....	.....	.....	cs40.75	.....	.....	.....	.....	.....	.....	cs54.80	.....	.....	.....	cs63.85	.....	.....
	Non-Skid	.....	s20.70	.....	s26.75	s28.25	c30.75	.....	.....	.....	s39.15	c39.85	c41.90	c42.85	.....	cs45.55	.....	.....	c54.25	c56.65	c57.50	cs59.90	c63.35	cs64.20	c67.10	.....	.....
	Gray Tubes	3.30	3.35	3.95	4.15	4.25	4.40	5.20	5.30	.....	5.40	5.55	5.70	5.85	6.25	6.30	7.15	.....	7.20	7.35	7.55	7.85	8.90	9.05	9.20	10.55	10.75
	Red Tubes	3.65	3.70	4.35	4.60	4.65	4.80	5.75	6.00	.....	5.95	6.15	6.30	6.45	6.90	6.95	7.90	.....	7.95	8.10	8.35	8.65	9.80	10.10	10.15	11.60	11.85
ORRVILLE	Plain	qs11.00	qs13.85	.....	qs15.35	.....	qc17.65	.....	.....	.....	qc23.50	.....	qc25.20	qc25.75	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Non-Skid	qc12.90	qs13.85	.....	qs19.95	.....	qc20.65	.....	.....	.....	qc27.55	.....	qc29.50	qc30.15	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Gray Tubes	2.75	2.85	.....	3.25	.....	3.40	.....	.....	.....	4.45	4.60	4.75	4.85	4.95	5.05	.....	6.00	6.05	6.15	6.25	6.45	7.35	7.50	7.60	.....	.....
	Sealon Red Tubes	3.55	3.70	.....	4.25	.....	4.40	.....	.....	.....	5.85	6.00	6.15	6.25	6.45	6.60	.....	7.70	7.85	8.05	8.20	8.35	9.60	9.75	9.90	.....	10.80
PALMER	Tubes	.....	6.35	.....	6.60	.....	7.00	.....	.....	.....	8.45	8.80	9.15	9.45	9.80	10.10	.....	11.10	11.40	11.75	12.25	.....	13.60	13.80	14.15	.....	.....
PARA-BALL	Plain	12.40	12.55	15.30	16.30	17.15	18.90	24.70	.....	27.06	24.95	25.45	26.65	27.30	32.90	29.65	.....	.....	36.75	38.40	39.00	40.60	43.85	51.15	46.45	.....	.....
	Non-Skid	13.05	13.20	16.30	17.10	18.05	19.85	25.85	.....	29.70	26.20	26.75	28.00	28.65	34.55	30.45	.....	.....	38.60	40.30	40.95	42.60	46.00	53.70	48.80	.....	.....
	Gray Tubes	2.95	3.00	3.40	3.75	3.80	3.85	4.55	.....	4.95	4.75	4.85	5.00	5.15	5.75	5.50	.....	.....	6.25	6.45	6.65	6.85	7.80	8.60	8.10	.....	.....
	Red Tubes	3.30	3.35	3.80	4.20	4.25	4.30	5.05	.....	5.50	5.30	5.40	5.55	5.70	6.45	6.10	.....	.....	7.00	7.15	7.35	7.65	8.70	9.50	8.95	.....	.....
PEARCE-ARROW	Morton Plain	11.00	11.85	.....	15.35	16.20	17.65	20.00	.....	.....	24.00	24.95	25.20	25.75	26.95	27.35	33.10	34.10	34.20	35.75	36.20	39.85	43.95	44.55	45.30	.....	.....
	Non-Skid	12.00	12.85	.....	16.95	18.00	19.65	22.40	.....	.....	27.10	27.90	28.50	29.50	30.20	31.10	36.00	38.00	39.00	40.15	41.40	42.00	47.20	48.50	50.00	.....	.....
	Germantown Cord Plain	.....	17.50	.....	21.95	22.25	24.00	39.00	.....	.....	33.15	34.75	35.95	36.10	40.00	43.50	38.15	45.25	46.75	48.75	50.50	52.00	56.50	.....	58.15	.....	.....
	Non-Skid	.....	18.25	.....	23.75	25.00	27.30	41.50	.....	.....	36.35	37.10	38.95	39.70	42.35	49.00	45.00	50.20	51.90	54.25	55.00	57.30	63.80	.....	64.75	.....	.....
	Red Tubes	3.25	3.45	.....	3.95	4.10	4.25	4.50	.....	.....	5.35	5.45	5.75	5.95	6.20	6.40	6.50	6.75	7.45	7.55	7.80	8.05	9.00	9.20	9.30	.....	.....
PEERLESS	Non-Skid	.....	16.00	.....	20.40	21.95	23.85	.....	.....	.....	31.75	32.85	34.10	34.80	.....	.....	.....	.....	46.20	48.30	49.00	.....	.....	.....	64.15	.....	.....
	Gray Tubes	.....	3.05	.....	3.45	3.65	3.80	.....	.....	.....	4.90	5.05	5.25	5.35	.....	.....	.....	.....	6.50	6.75	6.90	.....	.....	.....	8.40	.....	.....
	Red Tubes	.....	3.40	.....	3.95	4.15	4.20	.....	.....	.....	5.35	5.50	5.70	5.95	.....	.....	.....	.....	7.25	7.40	7.55	.....	.....	.....	9.10	.....	.....
PENNSYLVANIA	Bar O Circle	11.70	12.30	.....	15.95	16.90	18.75	20.75	.....	.....	24.50	24.95	26.10	26.75	27.95	28.45	.....	34.90	36.05	37.65	38.30	39.80	43.00	45.00	45.55	56.40	58.70
	Ebony	14.05	14.55	19.25	18.55	19.80	21.90	25.00	31.65	34.75	29.20	29.70	31.40	32.00	33.65	34.20	49.35	43.00	43.30	45.05	45.55	47.30	55.55	56.55	58.45	70.90	73.85
	Vacuum Cup	15.60	16.10	21.35	20.60	22.00	24.30	27.75	35.20	38.65	32.40	33.00	34.90	35.55	37.40	38.00	54.85	47.75	48.10	50.05	50.60	52.55	61.70	62.85	64.95	78.75	82.00
	Ton-Tested Gray Tubes	2.80	2.90	3.15	3.40	3.55	3.70	4.05	4.40	4.90	4.95	5.05	5.25	5.45	5.55	5.75	6.50	6.65	6.70	6.80	6.95	7.25	8.15	8.25	8.40	8.80	9.00
PERFECTION	Plain	17.70	18.00	.....	21.70	23.05	25.70	27.80	.....	.....	30.00	31.00	32.00	33.10	34.20	35.30	38.20	39.40	40.65	41.80	43.10	44.25	50.10	51.30	52.80	70.20	73.60
	Non-Skid	20.85	21.05	.....	26.60	27.55	30.60	33.00	.....	.....	36.90	38.10	39.20	40.45	41.75	43.10	.....	46.00	47.60	50.00	52.40	54.60	62.10	64.30	65.70	81.70	83.40
	Gray Tubes	3.20	3.30	3.50	4.20	4.35	4.50	4.80	5.10	5.25	5.35	5.45	5.65	5.80	5.90	6.05	6.85	7.10	7.30	7.45	7.70	7.95	8.75	8.95	9.25	10.55	10.75
	Red Tubes	3.40	3.55	3.70	4.50	4.60	4.85	5.30	5.60	5.65	5.75	5.85	6.10	6.25	6.35	6.50	7.45	7.60	7.80	7.95	8.20	8.45	9.30	9.50	9.80	11.10	11.35
PHARIS	Plain	13.10	13.85	17.50	17.90	18.65	20.55	22.90	.....	.....	27.60	28.05	29.25	29.80	31.00	31.50	45.40	.....	40.00	41.55	42.10	43.55	47.25	47.85	49.70	.....	.....
	Non-Skid	.....	14.85	.....	19.15	19.95	22.00	24.60	.....	.....	29.50	20.05	31.40	31.90	33.20	33.75	47.75	42.20	42.80	44.50	45.00	46.65	50.60	51.30	53.15	83.05	73.70
	Gray Tubes	3.15	3.35	3.45	3.75	3.80	3.95	4.15	.....	.....	5.45	5.35	5.45	5.55	5.80	5.90	6.75	6.90	7.00	7.15	7.25	7.45	8.55	8.65	8.90	9.45	9.70
	Red Tubes	3.50	3.65	3.75	4.20	4.25	4.30	4.70	.....	.....	5.80	5.90	6.10	6.20	6.40	6.50	7.60	7.70	7.75	7.85	8.10	8.25	9.40	9.70	9.80	10.50	10.65
PORTAGE	Plain	s14.00	s15.10	s16.75	s19.60	s20.70	22.45	25.50	s27.00	s28.45	s30.05	30.60	32.10	32.85	34.35	35.00	s43.10	s44.55	43.65	45.75	46.40	48.30	52.20	s53.00	55.35	s79.70	.....
	Daisy Non-Skid	s16.20	s17.45	s19.30	s22.45	s23.70	25.90	29.35	.....	s32.80	s34.45	35.15	36.95	37.75	39.55	40.30	.....	51.15	50.25	52.50	53.35	55.60	60.05	s61.00	63.50	s87.70	s89.55
	Gray or Red Tubes	3.20	3.45	3.75	4.20	4.30	4.45	4.60	4.95	5.50	5.65	5.90	6.10	6.25	6.45	6.60	7.35	7.50	7.65	7.80	8.10	8.25	9.05	9.30	9.40	10.25	10.10
PORTER	Giant	qs15.00	qs16.45	.....	qs21.50	qs22.65	24.35	c26.50	.....	.....	qs31.65	c32.35	c33.30	c34.35	c35.25	c36.30	qc44.00	c45.25	c47.70	.....	c48.80	c50.00	c56.10	cs57.20	c59.25	.....	.....
	Non-Skid	qs16.00	qs17.55	.....	qs22.85	qs24.25	26.30	c27.95	.....	.....	qs34.95	c35.45	c36.60	c37.40	c29.45	c40.00	qc47.75	c49.00	c51.15	.....	c52.55	c53.90	c59.95	cs61.60	c62.95	.....	.....
	Gray Tubes	2.85	3.00	.....	3.60	3.70	3.75	3.95	.....	.....	4.75	4.95	5.05	5.25	5.45	5.60	.....	6.35	6.50	6.60	6.75	6.95	7.85	8.00	8.15	.....	.....
	Red Tubes	3.15	3.40	.....	3.95	4.10	4.20	4.40	.....	.....	5.30	5.45	5.65	5.85	5.95	6.15	.....	7.15	7.25	7.35	7.50	7.75	8.75	8.90	9.00	.....	.....

Digitized by Google

TIRES AND TUBES—Continued

Name	Trade Name and Tread	28x3	30x3	32x3	30x3½	31x3½	32x3½	34x3½	36x3½	30x4	31x4	32x4	33x4	34x4	35x4	36x4	32x4½	33x4½	34x4½	35x4½	36x4½	37x4½	35x5	36x5	37x5	37x5½	38x5½
QUAKER	Plain	s14.30	s15.15	s16.00	19.45	s20.35	22.45	24.95	.....	.....	s30.20	30.70	32.00	32.55	c33.95	34.50	qs41.25	.....	44.15	c45.80	46.40	c48.15	c52.25	52.80	c54.90	cs71.35	cs74.30
	T.T.T. Non-Skid	s15.85	s16.85	s18.05	21.60	s22.45	24.95	27.85	.....	.....	s33.55	34.15	35.55	36.20	c37.75	38.35	qs43.40	.....	46.50	c48.30	48.85	c50.60	c54.95	55.60	c57.75	cs75.15	cs78.25
	Gray Tubes	3.20	3.35	3.50	3.75	3.95	4.00	4.20	4.35	5.00	5.10	5.40	5.50	5.60	5.80	5.90	6.80	7.00	7.05	7.15	7.25	7.45	8.55	8.65	8.90	9.45	9.85
	Red Tubes	3.50	3.70	3.90	4.15	4.35	4.40	4.60	4.85	5.50	5.55	5.95	6.05	6.15	6.40	6.50	7.55	7.70	7.75	7.85	8.00	8.20	9.40	9.50	9.80	10.40	10.90
RACINE	Plain	14.20	15.20	17.70	18.70	19.75	21.75	26.25	28.45	30.00	28.70	29.25	31.25	32.05	32.90	33.45	39.60	40.45	41.75	42.35	43.75	46.15	51.50	53.00	54.50	68.95	71.25
	Country Road	16.55	17.75	20.85	21.55	22.60	25.50	28.75	33.00	35.15	33.00	34.75	36.80	37.35	37.70	38.05	47.50	48.40	49.10	51.35	52.15	54.20	62.00	63.50	65.00	81.40	83.60
	Ribbed Cord	.....	.....	.....	.....	.....	39.80	.....	.....	.....	48.80	50.50	51.90	53.25	.....	.....	56.95	58.35	59.95	61.35	62.90	.....	74.60	76.30	78.00	92.50	94.60
	Non-Skid Cord	.....	.....	.....	.....	.....	42.35	.....	.....	.....	52.05	53.85	55.30	56.75	.....	.....	60.65	62.20	63.35	65.40	67.00	.....	79.40	81.40	83.20	98.60	100.85
	Gray Tubes	2.85	3.00	3.25	3.50	3.60	3.75	3.90	4.15	4.60	4.70	4.90	5.00	5.20	5.40	5.50	6.20	6.35	6.45	6.55	6.75	6.90	7.85	7.95	8.10	8.45	8.65
	Red Tubes	3.40	3.70	3.95	4.05	4.30	4.40	4.60	4.85	5.40	5.50	5.65	5.95	6.10	6.25	6.50	7.20	7.45	7.50	7.70	7.80	8.05	9.15	9.30	9.40	9.90	10.00
	Trusty	20.90	22.30	24.75	27.60	29.10	31.75	35.95	45.90	37.50	38.45	39.20	41.15	42.00	43.40	44.80	.....	53.10	54.90	57.35	58.20	60.60	67.45	68.50	71.45	74.00	76.00
RACINE HORSESHOE	Plain	qs15.50	qs16.00	qs17.00	20.00	qs20.50	22.00	23.00	.....	qs28.50	qs26.50	28.50	29.00	29.50	31.00	31.50	qc36.50	qc36.50	36.50	38.00	39.00	40.00	44.00	45.00	46.00	cs65.00	cs66.00
	Non-Skid	qs16.50	qs17.00	qs19.00	21.00	qs21.50	23.50	26.50	.....	qs30.50	qs31.00	31.50	32.00	32.50	34.50	35.50	qc40.00	qc41.00	42.00	43.00	44.00	45.00	51.00	52.00	52.50	cs69.00	cs70.00
	Gray Tubes	2.75	2.85	3.10	3.25	3.35	3.40	3.60	.....	4.25	4.45	4.60	4.75	4.95	4.95	5.05	.....	6.00	6.05	6.15	6.25	6.45	7.35	7.50	7.65	7.95	8.00
	Red Tubes	.....	3.40	.....	4.25	4.35	4.45	.....	.....	.....	5.45	5.50	5.60	5.75	.....	6.25	.....	.....	7.50	7.75	7.80	7.90	8.80	8.95	9.25	9.50	9.75
RECORD	Ribbed Tread	.....	qs14.30	.....	qs18.35	.....	qc21.75	.....	.....	.....	qs28.50	qc29.20	cs30.40	c31.25	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Red Tubes	3.50	3.40	3.80	4.20	4.25	4.35	4.65	4.95	5.35	5.50	5.60	5.85	6.10	6.25	6.35	.....	.....	7.30	7.40	7.50	7.75	8.90	9.20	9.00	.....	.....
	Gray Tubes	3.10	3.05	3.50	3.55	3.85	3.95	4.55	4.70	4.95	4.75	4.85	5.00	5.20	4.70	5.45	.....	.....	6.45	6.55	6.70	7.00	8.00	8.50	8.20	.....	.....
REPUBLIC	Plain	qs14.15	qs15.20	qs19.30	19.30	qs20.75	22.50	25.65	s32.60	s34.45	s30.05	30.70	32.25	32.95	34.45	35.00	41.05	c42.30	43.75	45.80	46.40	48.35	53.65	54.35	56.85	.....	.....
	Staggard Non-Skid	qs16.60	qs17.70	qs22.50	22.55	qs24.40	26.40	29.95	s38.40	s40.25	s35.20	35.90	37.70	38.50	40.30	40.90	48.10	c49.50	51.15	53.60	54.30	56.60	62.75	63.65	66.55	.....	.....
	Gray Tubes	2.90	2.95	3.20	3.45	3.60	3.75	4.15	4.40	4.90	5.05	5.20	5.35	5.55	5.70	5.85	6.55	6.75	6.80	6.95	7.05	7.35	8.25	8.40	8.50	8.95	9.10
	Blackline Red Tubes	3.35	3.55	3.85	4.15	4.35	4.40	4.65	4.90	5.45	5.60	5.70	5.95	6.20	6.40	6.50	7.30	7.30	7.60	7.70	7.90	8.15	9.15	9.30	9.50	9.90	10.20
REVERE	Plain	13.25	13.80	.....	17.95	18.85	20.80	27.15	.....	.....	27.45	28.00	29.30	30.05	36.20	31.90	.....	.....	40.45	42.25	42.90	44.65	48.20	56.25	51.10	.....	.....
	Anti-Skid Casings	15.25	14.50	.....	18.80	19.80	21.85	28.45	.....	.....	28.80	29.35	30.80	31.50	38.00	33.50	.....	.....	42.45	44.35	45.05	46.85	50.60	59.05	53.70	.....	.....
	Gray Tubes	2.85	3.00	.....	3.75	3.85	4.00	4.30	.....	.....	4.85	5.00	5.15	5.25	5.45	5.65	.....	.....	6.45	6.60	6.85	7.10	8.00	8.15	8.30	.....	.....
	Red Tubes	3.65	3.75	.....	4.65	4.80	4.90	5.35	.....	.....	6.00	6.05	6.15	6.25	6.55	6.65	.....	.....	8.10	8.25	8.40	8.50	9.65	9.90	10.10	.....	.....
REYNOLDS	Plain	.....	17.50	.....	21.90	.....	24.90	27.50	.....	.....	31.60	33.90	35.10	36.10	37.70	38.80	44.55	45.65	47.60	48.85	49.60	49.90	57.50	58.90	59.75	70.30	72.80
	Non-Skid	.....	24.40	.....	29.80	.....	31.60	34.65	.....	.....	40.10	41.45	42.70	44.60	45.70	46.80	54.80	55.90	57.75	58.45	59.70	60.90	67.70	68.50	69.75	90.50	93.25
	Para Tubes	.....	3.75	.....	5.25	.....	5.50	6.00	.....	.....	7.25	7.50	7.50	8.00	8.00	8.50	9.50	10.00	10.00	10.00	10.50	10.75	10.00	11.50	12.50	13.75	14.75
SAVAGE	Plain	qs12.00	qs12.65	16.45	qs16.05	qs16.85	18.40	20.45	c25.75	s26.65	qs23.80	24.70	25.60	26.05	27.25	28.50	.....	c34.90	c36.35	c37.60	c38.20	c39.40	c42.75	c43.25	c45.00	cs67.40	cs59.90
	Non-Skid	qs14.20	qs15.20	19.80	qs19.30	qs20.25	22.00	24.75	c29.80	s31.25	qs27.85	28.30	29.30	29.85	31.30	32.80	.....	c39.20	c41.40	c43.15	c43.95	c46.30	c46.45	c49.45	c51.15	cs77.10	cs68.20
	Grafnite Tubes	3.15	3.25	3.50	3.95	4.10	4.25	4.50	4.90	5.20	5.15	5.35	5.40	5.45	5.55	5.65	.....	6.55	6.80	6.90	7.15	7.30	8.05	8.30	8.40	9.90	10.05
SCHAVOIR	Gray Tubes	3.05	3.10	3.40	3.75	3.80	3.85	4.55	4.80	4.95	4.75	4.85	5.00	5.15	5.80	5.50	6.50	6.15	6.25	6.45	6.65	6.90	7.80	8.00	8.10	10.00	9.45
	Red Tubes	3.10	3.35	3.80	4.20	4.25	4.30	5.00	5.35	5.50	5.30	5.40	5.55	5.70	6.00	6.10	7.20	6.80	7.00	7.15	7.35	7.65	8.60	8.70	8.95	11.10	10.50
	Jumbo Red Tubes	.....	.....	.....	.....	.....	.....	.....	.....	.....	6.70	6.90	7.05	7.15	7.35	7.50	.....	8.40	8.80	9.05	9.20	9.40	10.90	11.10	11.25	.....	13.15
SEMPLE	Semco Red Tubes	3.60	3.75	3.90	4.50	4.60	4.75	5.05	.....	.....	6.05	6.20	6.40	6.60	6.75	6.95	7.95	8.20	8.35	8.50	8.70	8.90	9.85	10.05	10.35	11.00	11.30
SOUTHERN	Plain	q s9.60	qs9.90	.....	q12.75	qs13.70	15.00	c16.80	.....	.....	.....	qc20.60	c21.50	c21.90	c22.70	c23.05	.....	.....	.....	c31.10	c31.60	c32.60	.....	qc37.80	c39.10	.....	.....
	S Non-Skid	.....	qs11.20	.....	q14.90	qs16.75	.....	.....	.....	.....	.....	qc22.75	c23.80	c24.35	.....	c25.45	cs32.25	.....	qc33.60	c34.90	c35.25	c36.50	qc41.50	.....	c43.60	.....	.....
	Red Tubes	2.75	2.90	.....	3.35	3.45	3.50	3.65	.....	.....	.....	4.75	4.90	5.00	5.10	5.25	5.95	.....	6.15	6.25	6.35	6.50	7.20	7.35	7.50	.....	.....
SPEEDWAY	Non-Skid	.....	qs18.66	.....	qs23.33	.....	c30.00	c37.33	.....	.....	qs34.99	c36.40	c37.80	c39.20	.....	c42.00	.....	qc53.33	c53.33	c54.66	c56.00	qc59.33	qc68.60	qc70.00	qc70.00	.....	.....
	Red Tubes	4.33	4.46	.....	5.66	6.00	6.33	6.66	6.98	6.98	7.33	7.66	8.00	8.33	8.66	9.00	.....	9.69	9.85	10.08	10.40	10.77	12.00	12.66	13.33	14.66	15.33
STANDARD FOUR	Super Tread	14.10	14.70	.....	18.70	20.45	22.10	.....	.....	.....	29.10	29.65	31.35	31.85	.....	.....	.....	.....	43.65	45.20	45.95	47.80	53.20	.....	56.05	.....	.....
	Non-Skid	15.10	15.70	.....	20.00	.....	23.60	.....	.....	.....	31.55	32.10	33.90	35.40	.....	36.90	.....	.....	46.75	48.60	49.20	51.05	59.95	.....	63.10	.....	.....
	Gray Tubes	2.85	2.90	.....	3.45	3.60	3.75	3.95	.....	.....	4.60	4.85	5.05	5.20	5.35	5.45	.....	6.40	6.50	6.70	6.95	7.10	7.70	7.90	8.15	.....	9.45
	Red Tubes	3.30	3.40	.....	4.15	4.25	4.40	4.65	.....	.....	5.50	5.65	5.90	6.15	6.30	6.45	.....	7.15	7.30	7.45	7.70	7.85	8.65	8.85	9.00	.....	10.50
STAR	Ribbed Tread	qs22.00	.....	qs26.50	.....	c30.45	.....	.....	.....	.....	qc39.20	qc40.50	c41.75	.....	.....	c48.90	qc50.50	c52.10	c53.70	c55.30	.....	c63.85	cs66.05	c68.25	cs86.00	.....	.....
	All Star Non-Skid	.....	.....	qs29.00	.....	c32.10	.....	.....	.....	.....	qc41.00	qc42.25	c43.70	.....	c46.40	c50.25	qc51.85	c53.50	c55.00	c56.60	cs58.20	c66.00	cs68.20	c70.40	cs88.50	cs94.00	.....
	Pure Gum Tubes	.....	3.65	.....	4.70	4.90	5.10	5.40	.....	.....	5.95	6.10	6.30	6.45	6.65	6.80	7.60	7.80	8.00	8.20	8.45	8.65	9.80	9.65	10.00	11.60	11.65
STERLING	Sterling Special High Bar Non-Skid	qs17.46	qs20.80	.....	qs26.67	.....	cs29.81	.....	.....	.....	qs34.76	c43.64	c45.10	c46.55	.....	q49.46	s58.19	c59.65	c61.10	c62.56	c64.00	c65.46	c72.73	c74.20	c77.10	cs81.46	cs84.38
	Seamless Sterling Red Tubes	3.71	3.97	4.28	5.40	5.50	5.66	6.05	6.31	6.29	6.47	6.59	6.83	7.02	7.14	7.38	8.11	8.40	8.65	8.89	9.13	9.44	10.46	10.70	10.89	12.46	12.83
STRONGHOLD	Plain	.....	17.20	.....	22.05	23.50	25.45	28.55	.....	.....	32.60	33.30	34.65	35.35	37.10	37.70	.....	.....	42.35	43.70	44.90	46.15	52.30	53.85	55.30	.....	.....
	Stronghold Non-Skid	.....	18.85	.....	24.15	25.45	27.75	31.25	.....	.....	35.70	36.25	37.95	38.70	40.60	41.15	.....	.....	48.75	50.35	54.20	56.60	60.70	61.45	63.90	.....	.....
	Gray Tubes	.....	3.60	.....	4.40	4.45	4.55	4.85	.....	.....	5.90	6.05	6.30	6.50	6.70	6.90	.....	.....	8.05	8.20	8.35	8.60	9.65	9.80	10.05	.....	.....
	Red Tubes	.....	3.95	.....	4.80	4.85	5.00	5.20	.....	.....	6.55	6.75	6.95	7.10	7.30	7.55	.....	.....	8.55	8.70	9.10	9.25	10.40	10.55	10.75	.....	.....
SWINEHART	Plain	qs14.00	qs15.10	qs19.20	s19.20	qs20.60	22.40	25.40	s28.50	.....	qs29.85	30.50	32.00	32.70	c34.25	34.75	s40.80	s42.00	43.45	c45.45	46.15	cs48.10	c53.30	s54.10	56.50	cs79.05	cs74.20
	Ribbed	qs15.70	qs16.80	qs21.35	s21.35	qs23.00	25.00	28.30	s31.70	.....	qs33.30	34.00	35.70	36.45	c38.10	38.70	s45.45	s46.90	48.40	c50.60	51.40	cs53.60	c63.50	s64.35	67.20	cs92.40	cs88.00
	Non-Skid	qs16.40	qs17.60	qs22.40	s22.40	qs24.15	26.25	29.75	s33.35	.....	qs34.90	35.70	37.45	38.30	c40.05	40.65	s47.70	s49.30	50.80	c53.15	53.95	cs56.30	c66.65	s67.60	70.55	cs97.25	cs92.65
	Tubes	2.90	3.00	3.20	3.40	3.55	3.60	3.80	3.95	.....	4.70	4.85	5.00	5.10	5.20	5.30	6.20	6.30	6.35	6.45	6.60	6.80	7.75	7.90	8.05	8.40	8.60
TEN BROECK	Plain	qs12.39	qs13.09	qs16.63	q16.56	qs17.39	19.16	21.37	.....	.....	qs25.60	25.99	27.19	27.69	28.77	29.09	.....	.....	c38.00	39.46	39.90	41.42	s46.55	s47.11	s47.68	.....	cs64.00
	Non-Skid	qs13.91	qs14.86	.....	q19.48	qs20.42	22.26	25.16	.....	qs29.21	qs30.48	31.05	32.63	33.33	34.91	35.47	.....	.....	c43.13	45.19	45.72	46.46	cs51.16	s51.98	54.14	.....	cs74.56
	Ribbed	.....	qs14.86	.....	q19.48	qs20.42	22.26	.....	.....	.....	qs30.48	31.05	32.63	33.33	.....	.....	.....	.....	43.13	45.19	.....	.....	s51.16	s51.98	.....	.....	s74.56
	Gray Tubes	3.02	3.14	3.32	3.56	3.68	3.75	3.92	.....	4.77	4.89	5.08	5.20	5.32	5.44	5.56	6.46	.....	6.65	6.77	6.89	7.07	8.10	8.22	8.40	9.00	9.13
THERMOID	Non-Skid and Ribbed Tread	qs23.15	qs23.30	.....	qs29.30	qs31.30	c33.65	c36.65	.....	.....	qs40.65	c42.05	c43.25	c44.80	c45.45	c48.35	cs53.90	.....	c53.60	c55.90	c59.30	c61.00	c68.00	c70.30	c72.90	cs90.05	cs96.60
	Brown and DeLuxe Red Tubes	3.55	3.70	.....	4.75	4.90	5.05	5.45	.....	.....	5.95	6.05	6.25	6.50	6.60	6.75	7.70	.....	8.05	8.20	8.55	8.80	9.60	9.85	10.20	11.65	11.90
TYRIAN	Plain	qs14.30	s16.00	cs17.60	s20.00	qs21.15	c23.05	c26.10	.....	cs29.00	qs30.60	c31.35	c32.90	c33.65	c35.15	c35.70	.....	.....	c44.70	c46.70	c47.35	s49.30	c52.00	c53.85	c55.25	cs73.80	cs76.10
	Holdtite Non-Skid	qs15.60	s17.30	cs18.85	s22.10	qs23.25	c25.10	c28.15	.....	cs31.80	qs33.30	c34.05	c35.65	c36.30	c37.90	c38.45	.....	.....	c48.10	c50.10	c50.75	s62.75	c55.50	c56.25	c58.55	cs79.90	cs82.25
	Tourist Gray Tubes	2.75	2.85	3.00	3.35	3.45	3.55	3.75	.....	4.35	4.50	4.65	4.80	4.95	5.15	5.30	.....	.....	6.15	6.25	6.45	6.60	7.45	7.55	7.65	8.20	8.40

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Name	Trade Name and Tread	28x3	30x3	32x3	30x3½	31x3½	32x3½	34x3½	30x4	31x4	32x4	33x4	34x4	35x4	36x4	32x4½	33x4½	34x4½	35x4½	36x4½	37x4½	35x5	36x5	37x5½	38x5½
TYRIAN (Continued)	Tourist Red Tubes	3.10	3.20	3.30	3.75	3.85	3.95	4.15	4.85	5.00	5.15	5.35	5.60	5.65	5.85	.....	.....	6.85	6.95	7.15	7.40	8.25	8.40	8.50	9.15	9.30
	Extra-Heavy Gray Tubes	3.15	3.30	3.50	3.85	3.80	3.90	4.15	5.00	5.15	5.45	5.60	5.80	5.75	5.90	.....	.....	6.90	7.10	7.25	7.40	8.40	8.55	8.75	9.40	9.55
	Extra-Heavy Red Tubes	3.50	3.65	3.90	4.15	4.25	4.35	4.65	5.75	5.75	5.90	6.05	6.20	6.35	6.50	.....	.....	7.05	7.90	8.05	8.20	9.40	9.55	9.75	10.40	10.60
UNITED STATES	Plain	13.25	13.80	16.85	17.95	18.85	20.80	27.15	33.75	27.45	28.00	29.30	30.05	36.20	31.90	43.80	39.15	40.40	42.25	42.90	44.65	48.20	56.25	51.10	76.90	91.45
	Usco Non-Skid	15.25	14.50	17.70	18.80	19.80	21.85	28.45	31.90	28.80	29.33	30.80	31.50	38.00	33.50	46.00	41.10	42.45	44.35	45.05	46.55	50.60	59.05	53.70	80.70	100.70
	Chain Non-Skid	16.50	16.40	19.95	21.35	22.75	24.55	31.40	35.00	33.40	34.10	35.90	36.65	44.15	38.95	52.70	47.15	48.75	50.95	53.55	57.85	57.85	67.65	61.25	91.45	100.60
	Nobby Non-Skid	20.70	22.10	28.30	28.70	30.25	33.00	39.45	47.80	40.00	40.80	42.85	43.65	49.85	46.60	58.20	55.20	57.10	59.65	60.50	63.05	73.95	75.65	74.30	98.30	83.50
	Royal Cord Non-Skid										50.15	51.40	52.35		55.80	56.30	57.95	59.60	61.00	63.40	63.95	73.95	75.65	77.40		9.40
	Gray Tubes	2.85	3.00	3.15	3.75	3.85	4.00	4.30	4.70	4.85	5.00	5.15	5.25	5.45	5.65	6.15	6.40	6.45	6.60	6.85	7.10	8.00	8.15	8.30	9.25	11.25
	Red Tubes	3.65	3.75	4.00	4.65	4.80	4.90	5.35	5.85	6.00	6.05	6.15	6.25	6.55	6.65	7.90	8.00	8.10	8.25	8.40	8.50	9.65	9.90	10.10	11.10	
VICTOR	Plain	17.10	18.05	.....	22.25	.....	25.85	.....	.....	34.55	35.15	36.70	37.30	38.90	39.30	.....	.....	46.50	48.00	48.85	50.70	60.65	61.45	60.60	.....	.....
	Ribbed		18.90	.....	23.45	.....	27.20	.....	.....	36.25	37.90	38.50	39.20	.....	44.00	53.10	53.35	48.90	50.95	51.40	63.75	68.00	68.75	71.40	91.45	92.40
	Non-Skid	19.10	20.25	.....	25.15	28.15	28.85	.....	.....	38.72	39.40	41.10	41.90	43.55	44.00	53.10	53.35	53.90	55.00	57.75	69.75	68.00	68.75	71.40	9.35	9.65
	Victor Gray Tubes	3.10	3.30	.....	3.85	4.15	4.25	.....	.....	5.20	5.30	5.45	5.60	5.85	6.00	6.80	6.95	7.10	7.25	7.45	7.60	8.50	8.65	8.80	10.60	10.75
	Victor Red Tubes	3.40	3.60	.....	4.25	4.80	4.90	.....	.....	5.75	5.95	6.10	6.30	6.45	6.60	7.70	7.75	7.90	8.15	8.30	8.45	9.40	9.60	9.80	12.80	13.45
	Springfield Tubes	4.23	4.50	.....	5.55	5.70	5.80	.....	.....	6.90	7.10	7.25	7.55	.....	8.15	.....	8.85	9.05	9.30	9.55	9.70	10.55	10.80	11.00	12.80	13.45
	Springfield Red Tubes	4.60	4.85	.....	6.00	6.10	6.20	.....	.....	7.30	7.40	7.60	7.75	.....	.....	.....	9.60	9.80	10.05	10.25	10.45	11.40	11.60	11.90	13.90	14.55
VITALIC	Non-Skid	14.25	14.25	.....	18.50	.....	21.60	.....	.....	28.25	28.90	30.25	30.95	.....	.....	.....	.....	.....	43.60	44.35	44.10	.....	.....	52.75	.....	.....
	De Luxe Gray Tubes	3.15	3.26	3.47	3.78	3.89	3.99	4.20	4.90	5.09	5.25	5.41	5.51	5.67	5.78	6.62	6.72	6.83	6.93	7.09	7.25	8.09	8.35	8.19	9.06	9.29
	De Luxe Red Tubes	3.52	3.62	3.78	4.36	4.46	4.57	4.83	5.51	5.62	5.83	5.99	6.09	6.20	6.30	7.40	7.51	7.61	7.72	7.88	8.03	9.24	9.35	9.56	11.13	11.39
	Black Tubes	3.94	4.04	4.25	4.94	5.09	5.20	5.57	6.20	6.41	6.51	6.62	6.72	6.98	7.09	8.30	8.40	8.51	8.66	8.82	8.93	10.13	10.34	10.66	11.66	11.87
VULCAN	Gray Tubes	3.30	3.35	.....	4.15	4.25	4.40	5.20	.....	5.40	5.55	5.70	5.85	6.25	6.30	.....	.....	7.20	7.35	7.55	7.55	8.90	9.05	9.20	10.55	10.75
	Indian Red Tubes	3.65	3.70	.....	4.60	4.65	4.85	5.75	.....	5.95	6.15	6.30	6.45	6.90	6.95	.....	.....	7.95	8.10	8.35	8.65	9.80	10.10	10.15	11.60	11.85
WILSON	Wearwell Plain	q12.55	q12.20	.....	q15.85	.....	q18.55	.....	.....	.....	q24.75	.....	q26.50	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	9.25	.....
	Wearwell Non-Skid	q13.15	q12.80	.....	q16.60	.....	q19.45	.....	.....	q25.45	q26.00	27.15	q27.85	.....	.....	.....	.....	6.25	7.00	.....	.....	.....	8.60	8.95	10.30	.....
	Wearwell Gray Tubes	3.10	3.05	.....	3.75	3.80	3.85	.....	.....	4.75	4.85	5.00	5.15	5.80	5.50	.....	.....	6.25	7.15	7.65	6.90	7.80	8.70	8.80	.....	.....
	Wearwell Red Tubes	3.40	3.35	.....	4.20	4.25	4.30	.....	.....	5.30	5.40	5.55	5.70	6.45	6.10	.....	.....	7.00	qe65.45	qe67.75	qe67.75	qe78.75	.....	c82.55	qe90.00	.....
	Wilson Non-Skid									qe49.25	qe53.90	qe53.90	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Wilson Gray Tubes	3.40	3.35	.....	4.20	4.25	4.30	.....	.....	5.30	5.40	5.55	5.70	6.45	6.15	.....	.....	7.00	7.15	7.35	7.35	8.50	8.70	8.85	9.40	.....
	Wilson Red Tubes	3.70	3.65	.....	4.80	4.85	4.90	.....	.....	6.00	6.05	6.10	6.20	7.09	6.79	.....	.....	7.70	7.85	8.05	8.35	9.35	9.55	9.75	10.40	.....
WOODWORTH	Plain	qe18.55	qe19.70	.....	qe26.50	qe27.35	28.50	30.45	.....	qe37.70	c39.15	c40.50	c41.75	c43.00	c44.30	.....	.....	c56.65	c58.45	c61.90	c61.90	c67.90	c70.00	c72.00	.....	.....
	Non-Skid	qe20.85	qe22.00	.....	qe29.30	qe30.60	31.90	33.15	.....	qe42.50	c44.00	c45.55	c47.10	c48.55	c50.10	.....	.....	c63.75	8.65	c67.00	c69.60	c78.70	c80.95	c80.95	.....	.....
	Tubes	3.90	4.00	.....	4.40	4.55	4.65	4.95	.....	6.35	6.60	6.70	6.80	6.90	7.10	.....	.....	8.65	9.20	9.20	9.40	10.00	10.33	10.55	.....	.....
Z EE-ZEE	Plain	20.73	21.57	22.75	25.38	25.80	27.40	30.05	.....	32.83	34.37	35.62	36.39	37.71	38.89	47.52	48.42	49.33	50.09	52.04	53.70	56.22	57.95	58.86	72.90	78.26
	Tubes	3.82	4.11	4.35	4.72	4.83	4.94	5.05	6.04	6.16	6.28	6.58	6.80	6.89	7.06	8.10	8.29	8.41	8.45	8.98	8.95	10.67	10.77	11.23	12.44	13.04

NOTE:—The letter c means that a clincher tire is NOT made in this size, q means that a quick-detachable clincher is NOT made in this size, and s means that a straight-side quick-detachable is NOT made in this size.

How to Make Losses Into Profits

SOMETIMES a business runs at a loss and is supposed to be generally in bad health, whereas it is only some little detail that is wrong. And sometimes a dealer or garageman thinks all of his departments are wrong but one, whereas that one may be the only department that is wrong. Oftentimes a very slight change in methods will turn losses into profits and transform a losing enterprise into a source of prosperity for its owner. It is mostly a matter of knowing what is wrong and making it right, and you can't know what is wrong unless you have proper facilities for studying your business and keeping a check on things.

How To Do It

1—Keep an accurate record of everything.

2—Use the following forms:

A. Prospect Card—Records full information regarding prospect and work done on him.

B. Repair Order—Provides for inspection and repair. Reverse side is time and materials record.

C. Requisition—Form for obtaining materials from the stockroom.

D. Purchase Order—Form for purchasing goods or ordering work done outside of premises.

E. Workman's Time Card—A complete record of time put in each week. The payroll is made out from these cards.

F. Job Time Card—A form recording the starting and stopping time for each workman on each job. A time stamp may be used on it.

G. Casing and Tube Record—Contains make, type, size and serial number of tire, and also name of purchaser and date sold. One card for each size.

H. Battery Tag—In three parts. A claim check to the owner, another for the files, and the main tag attached to the battery.

I. Casing and Tube Tag—Similar to the battery tag but designed for tubes and casings.

J. Transient Storage Tag—Similar to the preceding tags but with spaces provided for washing, polishing, etc.

K. Universal Tag—This takes the place of all three preceding ones (H, I and J), yet is simple and compact.

These forms are illustrated and described on the next three pages.

3—Motor World can sell you these forms in case you have no other means of getting them. If you are interested in them, correspond with the *System Editor.*

4—Have an adequate accounting system. If you have no suitable system of your own, Motor World will sell you one for $15 and in addition, will teach you how to run it. With the system goes a complete book of instructions which has

(*Continued on page* 90)

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1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31

Name | Business | Car

Res. Address | Bus. Address

Res. Phone | Bus. Phone

Origin of Prospect | Worth

Model Wanted | Car Owned | Asked $ | Offered $

Remarks

Date	Salesman	Remarks	Date	Letters

Car purchased and why

PROSPECT CARD—Gives full information on prospect and his car. Salesman should have one copy and sales manager another. Card is small enough to slip readily into the pocket, size 4 x 6 in. The reverse side is ruled for additional notations. The spaces at the top are numbered according to the days of the month and an indicator may be used to show what day the card should be referred to

Name	Work	Date	Rate	Start	Stop	Time	Car

Quantity	Description	Register	Date	By	Price	Total

Week

No.

Name

Morning IN	Noon OUT	Noon IN	Night OUT	Extra IN	Extra OUT

Total hours

Rate

Wages for week

WORKMAN'S TIME CARD—For recording the number of hours the workman puts in per week. It gives his number, and name, and records time In and Out for morning, afternoon and overtime. At the bottom is room for total hours, rate and weekly wages. Size 3 x 5½.

Acme Garage

Main 41 — 71 Vanderbilt Ave.

Name — Date — Job No.

Home Address — Bus. Address

Phone — Phone

License No. — Motor No. — Mileage

Inspection	Description
MOTOR	
Valve tightness	
Valve adjustment	
Carburetor adjustment	
Fuel strainer	
Vacuum system	
Ignition connections	
Ignition insulation	
Spark plug points	
Spark timing	
Carbon deposit	
Cooling system	
Fan	
Cutout relay	
Voltage regulation	
Connections	
Insulation	
Starter	
Generator	
CLUTCH	
Cleaning	
Adjustment	
Lubrication	
GEARBOX	
Lubrication	
Adjustment	
DRIVING MECHANISM	
Universal lubrication	
Bevel gear adjustment	
Bevel gear lubrication	
Torque rod	
Radius rod	
RUNNING GEAR	
Brake adjustment	
Wheel bearing adjustment	
Wheel bearing lubrication	
Wheel alignment	
Spring lubrication	
STEERING GEAR	
Steering adjustment	
Steering lubrication	
MISCELLANEOUS	
Headlight focus	
Tire conditions	
Speedometer	
Greasecup lubrication	
Tight nuts and bolts	

When promised — Tested by — O Kd by

Work authorized by — Work accepted by

Casing and Tube Record

Size — Type — Make

Date rec'd	Serial No.	Date sold	To whom	Remarks

CASING AND TUBE RECORD—A file card for different sizes, types and makes of tires. For example, when a dozen 34 x 4 in. Blank non-skid tires are received, the date received and the serial number are recorded. Then as each is sold the purchaser's name is put down and the date sold. Adjustments are recorded in the remarks column. Size 4 to 6

REPAIR ORDER—Gives full information regarding car and owner on front. Free or paid inspection service is provided for at the left, and description of work to be done at right. There is ample space on the back for a full time and materials record. It is made in triplicate, one copy being on cardboard for the shop. Size 6 x 9½

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Acme Garage
71 Vanderbilt Ave.
Tacoma, N. J.

No. _____ Date _____

Sold to _____

Address _____

Clerk _____

Signature _____

_____ 191_

To _____

Acme Garage
71 Vanderbilt Ave.
Tacoma, N. J.

Purchase Order

Quantity	Description of Goods	Price

Shipping directions _____ By _____

Requisition No. 6314

_____ 191_ Job No. _____

Part No.	Description of Goods	Quantity	Cost Each	Total Cost	Price Each	Total Price
	Total					

Received by _____

SALES SLIP—Upper, left—Standard sales slip, made in duplicate. PURCHASE ORDER—Upper, right—For ordering work done outside of the shop or for buying parts or supplies. Size 4 x 6. Made in triplicate. REQUISITION—Above—For ordering goods from stock or parts room. Made in triplicate. Size 4 x 6

Job No. _____ Date _____

Owner _____

Work _____

		Start	Stop
Start			
Stop			
Time			
Rate			
Total			
		Workman	

JOB TIME CARD—Each time a man starts a new job he makes out one of these and stamps it in the space marked "Start." When he has finished that job he stamps it in the "Finish" space. The elapsed time, the rate and the total charge are placed at the left. If there is no time stamp, then only the space at the left is used. These slips may be used for entering the labor charges recorded on the back of the Repair Order form

Universal No. 6140

In _____ Out _____ In _____ Out _____

Date _____ Phone _____

Name _____

Address _____

Make _____ No. _____

Volts _____ Amps. _____

Wash _____

Polish _____

Gasoline _____

Oil _____

Storage _____

Repairs _____

When Promised _____

By _____ Paid _____

Date _____ No. 6140

Name _____

Address _____

Make _____ Serial _____

When Promised _____ By _____

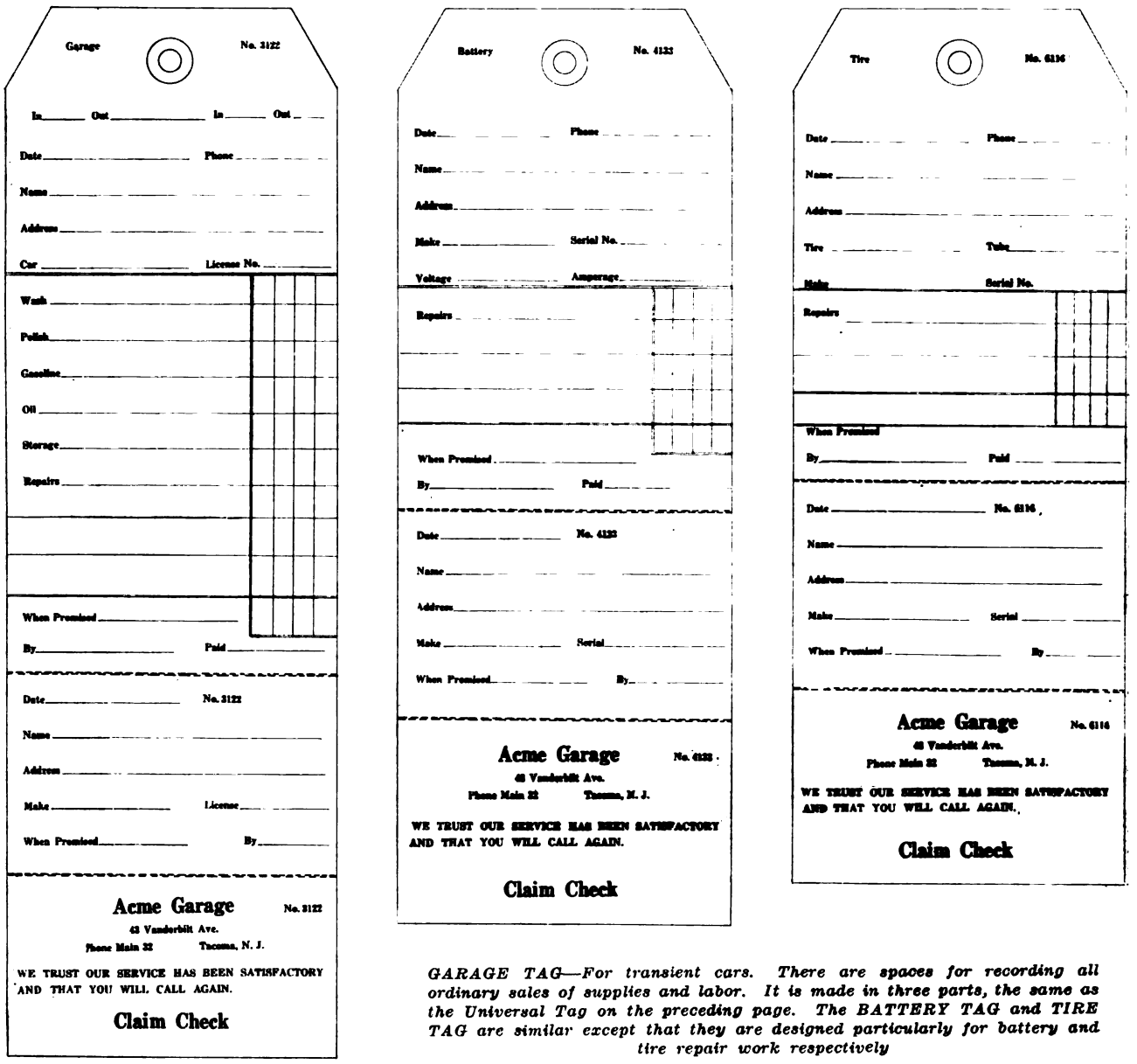
Acme Garage No. 6140
43 Vanderbilt Ave.
Phone Main 22 Tacoma, N. J.

WE TRUST OUR SERVICE HAS BEEN SATISFACTORY AND THAT YOU WILL CALL AGAIN.

Claim Check

UNIVERSAL TAG—May be used for checking transient cars, tires, tubes or batteries, or other articles left for repair or storage. The upper part goes on the article, the Claim Check is given to the customer, and the part in between is filed in the office

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GARAGE TAG—For transient cars. There are spaces for recording all ordinary sales of supplies and labor. It is made in three parts, the same as the Universal Tag on the preceding page. The BATTERY TAG and TIRE TAG are similar except that they are designed particularly for battery and tire repair work respectively

How to

Make Losses Into Profits

(*Continued from page* 87)

enabled between 1,000 and 2,000 dealers and garagemen, many of whom are ex-mechanics to keep their own books and run paying businesses at greater profits than before.

How to Install Motor World System

1—Take an inventory. This means counting everything you have in your place of business, just the same as you would count the number of sticks in a woodpile or the number of pigs in a pen.

2—Make a table of your ASSETS. These are things that are worth something to you, such as your INVENTORIED STOCK, your BILLS RECEIVABLE, your money in the bank, and so forth.

3—Make a table of your LIABILITIES. These are obligations and things you owe, such as Bills Payable and other items that are explained in detail in the Motor World instruction book.

4—The difference between these two tables is your SURPLUS or a DEFICIT, as the case may be. Save this table and revise it every month. It has nothing to do with your routine monthly operations.

5—Open the system book and start entering your daily operations without any regard to your statement of assets and liabilities.

6—At the end of the month, total the proceedings for the month and revise your statements of assets and liabilities, make a statement of profit and loss and make up the other tables shown in the instruction book.

How to Check Losses

1—From your accounting system, find what department lost money.

2—Find the reasons why it lost money.

3—Ascertain what you must do to make it pay.

4—Then do whatever is necessary to make it pay.

5—Check each department each month to see if it is doing better thani t did last month.

6—Find what departments are making a small profit.

7—Work for bigger profits in all departments.

8—Offer a bonus of some kind to all employes for gains in their department. This can be based on a salary and commission. For instance, you may in addition to the present salaries you are paying, give the employes 50 per cent of half the profit, their share to be divided pro rata according to their salaries.

9—Write to Motor World for any instruction or advice on the operation of any of the system part of your business.

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How to Tell the Age of a Hudson

Save This Page

OFTENTIMES it is difficult for the dealer who has to trade to tell exactly the age of a car. There are certain definite marks of identification, however, and these are being presented in a series in MOTOR WORLD. In the case of the Hudson, the serial numbers are the surest means of identification. They are found on a plate on the riser of the front seat, underneath where the driver sits.

Serial Numbers of Hudson Cars

Model	Year	Cyl.	Car Number	Type
20	1910	4	1 to 4000	Open Roadster.
20	1910	4	4001 " 5000	Fore-Door Roadster.
20	1910	4	5001 " 7100	Touring Car.
20	1911	4	7101 " 7500	Roadster
33	1911	4	7501 " 9000	Open Touring Car.
33	1911	4	9001 " 9500	Fore-Door Touring Car.
33	1911	4	9501 " 11500	Torpedo Touring Car.
33	1911	4	11501 " 15000	Pony Tonneau.
33	1912	4	15001 " 21000	Touring Car.
33	1912	4	21001 " 23000	Torpedo.
33	1912	4	23001 " 24000	Speed Roadster.
33	1912	4	24001 " 26000	Commercial Roadster.
33	1912	4	26001 " 26500	Limousine.
33	1912	4	26501 " 27000	Coupe.
33	1912	4	27200 upwards	5-Passenger Torpedo.
37	1913	4	30001 to 35000	Touring Car.
37	1913	4	35001 " 37000	Torpedo.
37	1913	4	37001 " 39000	Roadster.
37	1913	4	39001 " 39100	Coupe.
37	1913	4	39101 " 39200	Limousine.
37	1913	4	39201 " 40000	Special.
54	1913	6	45001 " 50000	Touring Car.
54	1913	6	50001 " 52000	Torpedo.
54	1913	6	52001 " 54000	Roadster.
54	1913	6	54001 " 54100	Coupe.
54	1913	6	54101 " 54200	Limousine.
54	1913	6	54201 " 55000	Special.
54	1913	6	55001 " 56000	7-Passenger.
54	1914	6	56501 " 59001	Touring Car.
54	1914	6	61501 " 61700	Sedan.
54	1914	6	62001 " 62500	Special.
40	1914	6	63001 " 73000	Touring Car.
40	1914	6	73001 " 73500	Roadster.
40	1914	6	75001 " 75500	Cabriolet.
40	1914	6	76251 " 76800	5-Passenger Phaeton.

Model.	Year	Cyl.	Car Number	Type
40	1914	6	77001 " 77201	R. H. Drive Touring Car..
40	1915	6	73501 " 75000	Roadster.
40	1915	6	75501 " 76000	Cabriolet.
40	1915	6	76001 " 76250	Coupe.
40	1915	6	76801 " 76950	Limousine.
40	1915	6	77201 " 77600	R. H. Phaeton.
40	1915	6	77601 " 77700	Landaulet.
40	1915	6	78001 " 90000	L. H. 6-Passenger Phaeton.
54	1915	6	59001 " 61500	Phaeton.
54	1915	6	61701 " 62000	Limousine.

"G" SERIES

Six-40	Standard Tread	60" Tread
Phaetons, L. H. Drive	G-10001 to G-28000	G-29001 to G-30000
Phaetons, R. H. Drive	G-28001 " G-29000	
Roadsters	G-30001 " G-32000	G-32000 to G-33000
Cabriolets	G-33001 " G-35000	
Limousines	G-35001 " G-36000	
Town Cars	G-36001 " G-37000	
Coupes	G-37001 " G-38000	
TouringSedans	G-38001 " G-40000	

"H" SERIES

Model	Standard
Phaeton	H-1 to H-56999
Roadster	H-64000 " H-67999
Cabriolet	H-71000 " H-81999
Limousine	H-86000 " H-87999
Town Car	H-88000 " H-89999
Touring Sedan	H-90000 " H-99999
60" Tread	R. H. Drive
H-57000 to H-60999	H-61000 to H-63999
H-68000 " H-69999	H-70000 " H-70999
H-82000 " H-84999	H-85000 " H-85999

The G series is the 1916 *car, brought out about June* 1, 1915.

The H series is the first Super-Six, brought out first at the New York show in January. 1916. *It is the* 1917 *car.*

Any car labeled "J" is the present series, the 1918 *car.*

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National Show Work Humming Merrily On

Interest High and Great Success Indicated—Order of Drawing Is Overland, Buick, Dodge, Studebaker

NEW YORK, Oct. 4—The New York and Chicago shows, to be held in January, will be as great successes as previous years if the interest at the drawing which was held to-day for spaces at both shows is any indication of the interest the manufacturers are displaying in the shows. Following the custom of previous years, practically all members of the N. A. C. C. were at headquarters here to-day where the drawing for show space was conducted by S. A. Miles.

To-day 78 different motor car manufacturers drew space for the Grand Central Palace show, to be held in New York Jan. 5 to 12. Of these 72 were gasoline car manufacturers, 5 electrics, and 1 steam. This list represents but one new exhibitor as compared with a year ago, namely, the Stanley steamer.

While the number drawing for space this year is approximately 20 less than that of a year ago, the firms drawing this year represent the best in the industry. Among those who were present last year but will be missed this year at New York are: Ben Hur, Bour Davis, Briggs Detroiter, Cunningham, Bateman, Barley, Doble, Drexel. Emerson, Enger, Ingram-Hatch, Kent, Lozier, Majestic, Metz, Pullman, Pathfinder, Princess Sun and Sterling. There will be several additional exhibitors added to the present list for the coming season before the show opens, as there remain several spaces on the third floor of the Palace and several spaces on the fourth floor. The fourth floor offers a good deal of flexibility by way of taking in new exhibitors so that there should be ample room for late comers.

The exhibit of electrics at New York will be practically the same as a year ago. They have been given a space by themselves on the second floor, where the following makers will exhibit: Woods, Detroit, Ohio, Milburn and Baker-R & L. With the Baker-R & L exhibit will be the Owen magnetic cars.

The privilege of making first choice for the New York show fell to Willys-Overland, a privilege which it has enjoyed for the past 3 years. Second position was drawn by Buick and third by Dodge. Others in order of drawing were Studebaker, Maxwell, Chevrolet, Cadillac, Hudson, Packard, Reo, Oakland, Chandler, Saxon, Paige, Oldsmobile, Pierce-Arrow, Chalmers, Mitchell, Hupmobile, Franklin, Haynes, Marmon, Nash, Velie, Cole, Dort, Winton, Grant, National, KisselKar, Stearns, Briscoe, Stutz, Peerless, Allen, Premier, King, Lexington Scripps, Moon, Auburn, Apperson, Crow, Inter-State, Mercer, Case, Marion-Handley, Elcar, Jackson, Fiat, Empire, Westcott, Monroe, Patterson, Regal, Davis, Moline, Liberty, Jordan, Standard, McFarlan, Abbott, Hollier, Hal, Columbia, Kline and Austin.

The representation of manufacturers present was very good compared with former years. The majority of the factories had their leading men present to select the space, but some of them delegated the work to their New York distributors or dealers.

As soon as drawing for the New York show was completed, the drawing for space for the Chicago show, to be held in the Coliseum and Armory, was taken up. The same order of drawing was followed out and the four leaders, namely, Willys-Overland, Buick, Dodge and Studebaker, selected the four corner spaces in the center of the Coliseum. All of the space in the Coliseum, Annex and Armory was taken. In addition several of the spaces in the Greer Building were drawn. There still remain several spaces in the Greer Building to be allotted and when these are taken spaces in the basement of the Coliseum Annex will be available.

The exhibitors at the Chicago show are practically the same as at the New York show, with the exception that Glide and Dorris will be at Chicago.

There are several concerns which exhibited last year at Chicago but will not be there at the coming show. Among these are: American, Ben Hur, Briggs Detroiter, Classic, Cunningham, Dixie, Emerson, Enger, Hassler, McFarlan, Maibohm, Metz, Pan American, Pathfinder, Princess, Pullman, Sun and Standard. It is possible that some of these may later decide to take space in Chicago.

The figures show that already 80 exhibitors have drawn space for the Chicago show as compared with 94 that drew a year ago. It is impossible to state as yet how many exhibitors Chicago will have as new names will be added from week to week. The exhibit of electrics in Chicago will be similar to last year, space being allotted to them along the center aisle of the Armory. The exhibitors will be Woods, Detroit, Ohio, Milburn and Baker R & L. The Stanley Steamer will be exhibited for the first time. Following is the list:

(*Continued on page* 96)

Cold Weather Made Profitable

Detroiter Sees Trouble

DETROIT, Oct. 4—The Detroiter Motor Car Co. has been placed in the hands of a receiver and the Security Trust Co. of Detroit has been named as trustee. The Security Trust Co. will endeavor to determine the assets and liabilities of the company and will then notify creditors.

Cold Weather Made Profitable

Canada's Prosperity

MONTREAL, Oct. 6—After two and one-half years' warfare Canada is this year buying 100,000 new motor cars—almost five times as many as were purchased during 1914 and an increase of 85 per cent over the normal for 1913 and 1914.

98 at First M. A. M. Show Space Drawing

50,000 Feet Has Been Taken—Parry Has 800 Feet, the Biggest at the Show—Only One Stayed Out

NEW YORK, Oct. 8—Ninety-eight accessory concerns last week were allotted space at the New York national show Jan. 5-12. This compares with 103 at the first drawing last year. Allotments for Chicago show space will be given later this week. More than 50,000 sq. ft. of space will be applied for this year at both shows. The biggest accessory space at the New York show was taken by the Parry Mfg. Co., which will have 800 sq. ft. But one M. A. M. member cancelled its application for show space due to the war. This company, however, is working on full time on Government contracts. The executive committee held its first meeting on Thursday at Washington, where new members were elected as follows: Standard Steel Spring Co., Coraopolis, Pa.; Miller Transmission Co., New York; Rand Mfg. Co., Haverhill, Mass.; Philips-Brinton Co., Kennett Square, Pa.; Rex Mfg. Co., Connersville, Ind.; Warner Lens Co., Chicago; DuBois Piston Ring Co., Albany, N. Y.

The list of New York accessory exhibitors follows:

(*Continued on page* 96)

Cold Weather Made Profitable

Nashville Association to Exhibit

NASHVILLE, TENN., Oct. 6—At a meeting of the Nashville Automobile Trade Association it was decided to hold a show in the near future, under the auspices of the association, probably in February.

One of the most expensive features of storage, it was brought out, is calling for and delivering cars to customers who drive to their own doors and telephone for a man to put up the car when they have finished with it. Washing and caring for cars in storage is also an expensive feature. The opinion prevailed that the logical solution seemed to lie in raising the price for storage from the existing rates of $6 and $7 per car to $10 for cars that are driven in by the owners and called for without delivery by the garage, and $12 where the cars have to be handled by garage employees. Before the business session a lunch was served by the Hirsig Auto Supply Co., at whose place the meeting was held.

Cold Weather Made Profitable

Montreal Show Jan. 19-26

MONTREAL, Oct. 6—Final arrangements have now been made by the Montreal Automobile Trade Association to hold the 5th annual national motor show of Eastern Canada in Almys Building from Jan. 19 to Jan. 26 inclusive.

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Tax Problem Being Met by the Dealers

None Proposes to Carry Load Himself—Some Would Dicker a Little But Most Stand Firm

DES MOINES, Oct. 9—Des Moines motor car dealers are practically unanimous that the new 3 per cent war tax should be adjusted as part of the list price as an indirect tax on the consumer. They say that absorption by the dealer entirely is out of question on account of the present low margins. They think that making the tax direct on the consumer would lead to unpleasant business relations which would not prevail if the tax were added to the list price.

The Des Moines Automobile Dealers Association discussed the question at a meeting, and agreed that the indirect tax is preferable. However, some dealers think that on account of certain cars already announcing new prices it would be necessary to make the war tax an individual charge added to the list price until the new price list is issued.

C. L. Herring, Ford distributer, while agreeing that if the tax on new cars is necessary an indirect tax is preferable, he is emphatic that any tax which hits buyers of new cars and not all motor car owners is manifestly unfair and calls attention to the impossibility of dealers absorbing the war tax. He says that Ford distributers' profit is only 3 per cent of the gross.

Cold Weather Made Profitable

Tax Puzzles Boston

BOSTON, Oct. 9—The Boston automobile dealers are puzzled over the new revenue tax, and they have been wiring and telephoning their factories to get some information. In discussing it some of the men have not yet figured out whether to absorb it or to pass it on to the dealer.

John H. Johnson, Buick, said that with the prices going up gradually on motor cars the dealer will have some difficulty in trying to adjust prices so that it should be added to the consumer's cost. He considers splitting the price with the buyer.

Joseph S. Donovan, Studebaker, said that the new tax should be divided three ways, the maker, dealer and consumer each paying one-third. He has studied out such a plan because of the probability of such a tax being passed long ago and he is going to see if he can work it out.

President John H. McAlman, of the Boston Automobile Dealers' Association, who handles the Stearns-Knight, said he would not try to pass the tax along to the buyer without first notifying the public just as a raise in price should be advertised.

A. H. Sowers, Jackson, said that he will call a meeting of all his New England dealers to discuss the problem, and if they decide that they do not pass the tax along he will share it with them and try to get the factory to pay a portion instead of putting it on the buyer.

George W. Houk Dies



Last picture taken of Mr. Houk. It was made at his California ranch

LOS ANGELES, Oct. 8—George W. Houk, one of the pioneers of the wire wheel business in America, died in this city last week of pneumonia. He was 52 years old. He came to this section in May and went to his ranch near this city for a needed rest. His condition improved and a complete recovery was hoped for, but paralysis of the right side developed and bronchial complications were followed by pneumonia, which proved fatal. He is survived by a daughter, Margaret, who was with him throughout his stay here. She is Mrs. F. H. Moody. Her husband is manager of the Houk business in California.

Houk spent his boyhood in Wellsboro, Pa., and in early life entered the bicycle trade. After several years in New York City he went to London and spent 15 years there in the bicycle and accessories business. He then returned to America and was connected with the Packard and Oldsmobile businesses in Boston, having the agency for the latter

About 5 years ago he brought the Rudge-Whitworth wire wheel to America from England and had it manufactured for him by the Standard Roller Bearing Co., of Philadelphia. Later he bought the McCue plant in Buffalo and operated as the Houk Mfg. Co., making and selling wire wheels of his own manufacture. The business prospered and to Houk is given much credit for the development of the wire wheel industry in America, he having single-handed fought a long hard fight from the time he introduced the first wheel until his business reached its present proportions.

Overland Going to Compete with Ford

Coming Out with Little Car Under $500—Starter, One-Man Top and Other Features Incorporated

TOLEDO, Oct. 6—The expected and long-looked-for has happened in the cheap car field by the announcement that John N. Willys, of the Willys-Overland Co., has finally completed, tested out, and settled on every detail of the new Overland car which is to rival the Ford.

For several years the Willys-Overland Co. has been working on this car. It was expected a year ago, but many previous models have been rejected. The new Overland comes as a direct challenge to the Ford in the low-priced field and plans are already matured for building it in enormous quantities, apparently to outproduction Ford.

While the price is not stated, it will sell for less than $500 and will carry a complete equipment, including electric starting and lighting with combined dimmer control. In its complete equipment form, including starting battery, the lighting system, an extra tire, and tire carrier, the weight is 1500 lb. Tires are the same size as those used on Fords.

Externally the body is somewhat different from other Overland types, due largely to a unique system of springs, which give a distinctive appearance to the front and rear, and while the wheelbase is 100 in. it is claimed that this spring suspension system gives the effect of a car having a wheelbase of much greater length. Using the standard Overland radiator, although of slightly smaller size, ties this new machine up with the Overland line so far as appearance is concerned. The body is a streamline design with removable upholstery.

The engine is 3½ in. x 4 in. and reaches the peak of its power curve at 2000 r.p.m. Though it is 13 per cent smaller than the Ford motor it is stated to produce 52 per cent more power, since the Ford engine reaches its peak at 1200. The transmission is a two speed sliding gear and a conventional clutch is used.

An entirely original sort of frame is used, and the cross members are supplied by the running board supports, which are further stiffened by the steel battery box that lies just inside the frame under the front seat. The gasoline tank is hung under the cowl on a three point suspension.

All the control is centralized on the middle of the dash and comprises ignition switch lamp dimmer and throttle setting for idling together with the choke. Front and rear axles are somewhat similar to Ford's, but the latter has ball bearings.

The fenders are crowned, the front ones being pressed in such shape as to combine with the hood ledge; there are exceptionally wide fore doors, a 16-in. steering wheel and a slanting windshield. A one man top completes the equipment.

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Enclosed Car Show Good Money's Worth

Buffalo Dealers Pleased with Results—Free Tickets Few—Visitors Good Buyers

BUFFALO, Oct. 6—Buffalo's exclusive closed car show held October 1 to 6 at the Elmwood Music Hall was successful from the point of business done. Only closed cars with permanent bodies were exhibited. In the entire exhibit there was not one car with a detachable top.

Dealers who exhibited say that they made more sales than at any other show in which they have entered cars.

The show was designed for people who were really thinking of purchasing an automobile, and because of this less than 1000 passes were given out, whereas at former shows as many as 8000 free admission tickets have been distributed. There were no trade tickets at all, and with the exception of the comparatively few passes every person who entered the hall paid an admission fee of 50 cents.

The tickets were distributed and sold through the dealers who exhibited. About thirty dealers, or 75 per cent of the total in Buffalo, had cars at the show, and about 75 different models were shown.

John J. Gibson, secretary of the Buffalo Automobile Dealers' Association, under whose auspices the show was run, is of the opinion that the closed car show will absorb all other shows of motor cars in Buffalo.

Dealers from all western New York flocked to the show. The Buffalo district takes in New York State from Lake Erie east to Seneca County, south to Erie, Pa., and a good part of the province of Ontario, Canada. Dealers visited the show from as far as Jamestown, Hornell, Warren and Meadville, Pa.

The closed cars shown were priced from the minimum of $1,060 to the maximum of $7,000. It became apparent, however, before the show was many days old that the big demand was for the lower priced motor car, and of those sold during the exhibition 75 per cent were under $2,000. This, Buffalo dealers say, is an indication of the demand on the part of folks of moderate means for an all-the-year-around car.

Space for exhibitors was sold at 50 cents a square foot, and the average space taken was a square 12 x 12, or the value of $72. The dealers who exhibited will realize a return of about 75 cents on the dollar.

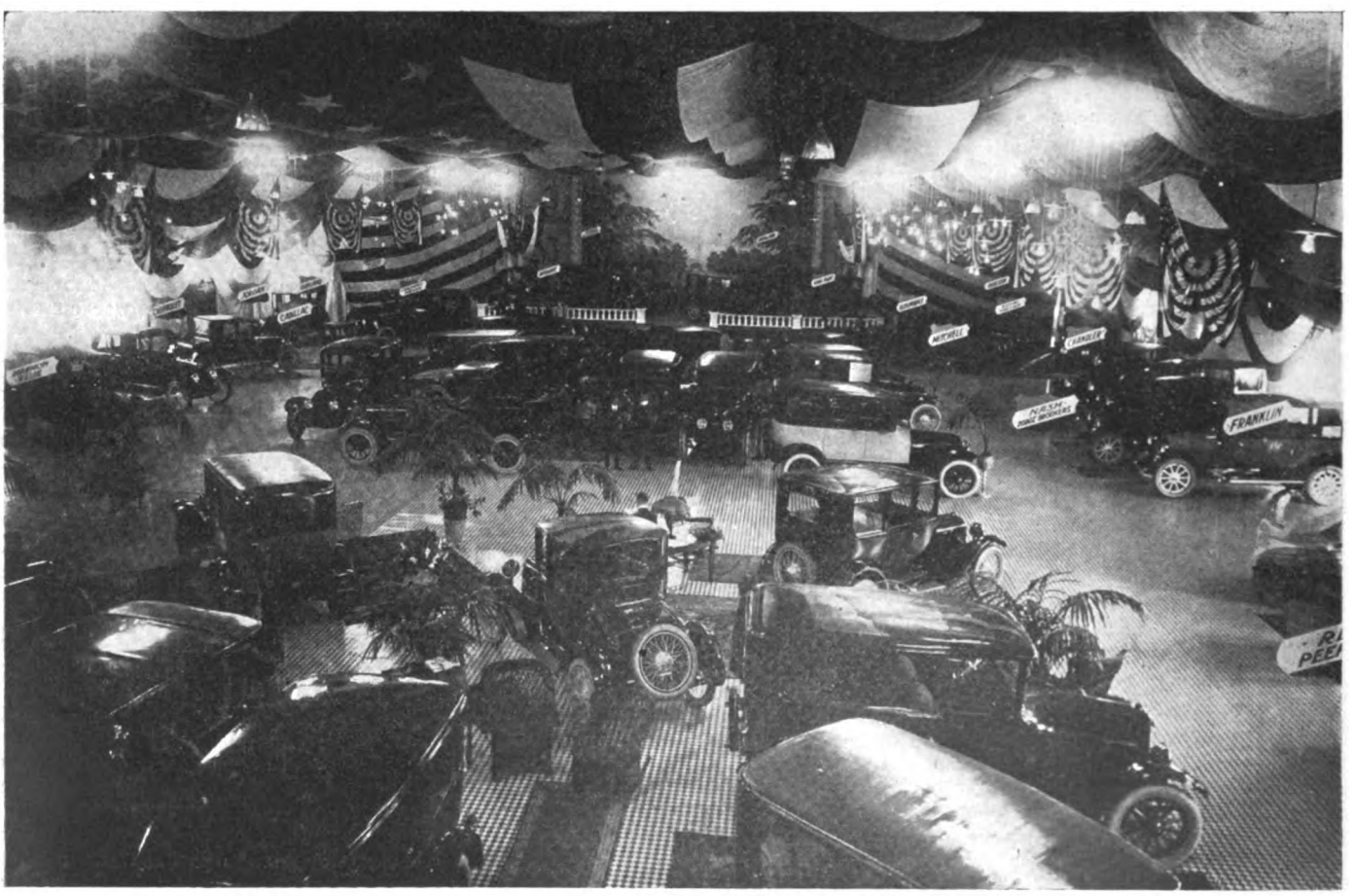
There were many features to this first closed car show. *The machines were not arranged in aisles but were placed here and there over the hall so as not to give too precise an appearance. The entire floor space was covered with green-*

(*Continued on page* 95)

Chalmers Output to Be Cut and Improved

Production Promise of $20,000 Is Made with Assurance That Cars Will Be of Highest Quality

DETROIT, Oct. 6—Walter Flanders, president of the Maxwell Motor Co., states that he will not promise Chalmers dealers more than 20,000 cars this next year, but has assured them that each one will be of the highest quality. The general staff, which is now moving to the Chalmers plant, is practically the same as the old Maxwell staff, and includes: Thomas J. Toner, sales manager of both companies and also in charge of advertising. Toner has been with Flanders through several of his business successes; Walter M. Anthony, who has worked with Flanders since he took over the Maxwell company four years ago, is comptroller; Charles Adams, also a veteran Flanders lieutenant, is production manager; Wm. Kelly and E. J. Miles, engineers; Roy M. Hood is purchasing agent, and Carl H. Pelton is assistant to President Flanders. Mr. Pelton, an attorney, also looks after the legal business of both companies. B. A. Lyman is assistant treasurer; J. H. Johnston, general auditor, and Gordon Muir, advertising manager.



The cars in Buffalo's Enclosed Car Show were set in with a rather artistic arrangement which added to the atmosphere that is essential in salon affairs of this kind. Note the linoleum covering on the floor and the use of flowers and palms

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Prominent Tradesmen Assume New Duties

Resignations and Promotions Place Workers in New Places

D. McCall White, chief engineer of the Cadillac Motor Car Co., has been made vice-president in charge of all manufacturing plants. **W. A. Blackburn** has become manager of manufacturing. **H. Linberg** is manager of production and **W. E. McKechnie** manager of building and maintenance.

Russell S. Burnett has been appointed assistant to the manager of the Standards Committee of the Society of Automotive Engineers. He has previously been connected with the Bijur Motor Lighting Co.

R. P. Bishop has resigned as sales manager of the King Motor Car Co. to become assistant sales manager of the Nash Motors Co., Racine, Wis. He is succeeded by W. C. Hood.

J. P. Winterson has resigned as zone manager of the Chalmers Motor Co. in the Central Southwest to join the sales forces of the Elgin Motor Car Corp.

B. J. MacMullen has resigned as general manager of the Hudson-Phillips Motor Car Co. of St. Louis to become manager of the Chevrolet factory in that city.

R. J. McElwee, purchasing agent for the Detroit Specialties Co., has resigned to join the General Motors Co. at Pontiac. He is succeeded by J. H. Burnie.

R. C. Frampton, former field manager of the sales department for the Hudson factory, has been named general manager for the Hudson-Phillips Motor Car Co. of St. Louis, a factory property.

J. A. Ryan, a factory man, has taken charge of the Michelin Tire Co. branch in St. Louis, succeeding Fred Morey, transferred to the factory.

Wm. H. Morgan has been made manager of the factory branch of the Nash Motor Works at Kansas City. He was formerly of the Bush-Morgan firm handling Paige cars in this territory.

L. C. Pettier, formerly in charge of the used-car department of the Wyckoff Motor Sales Co., has associated himself with the E. A. Myers Co., Pittsburgh, Briscoe and Kissel distributers.

H. M. Damon, formerly manager for the Iron City Motors Co., Pittsburgh, has taken a position with the Anderson Electric Co., Detroit.

Walter E. Baker, formerly with the National Cash Register Co. and the International Time Recording Machine Co., has been appointed sales manager for the E. A. Myers Co., Pittsburgh, distributers for Briscoe and Kissel.

Neil Sullivan has been appointed manager for the Iron City Motors Co., Pittsburgh, Hupmobile distributer.

Sol Sullivan, formerly with the G. T. Overholt Co., Pittsburgh, has been made sales manager for the Jackson Motor Sales Co., Pittsburgh, Jackson distributer.

P. C. Keenan, formerly assistant general sales manager of the Winchester Repeating Arms Co., has been appointed manager of the Chicago branch of the Pennsylvania Rubber Co.

Harris M. Hanshue, manager of the Los Angeles Apperson branch, has been appointed Pacific coast manager. He will retain headquarters at Los Angeles, but will have charge of Apperson business in California, Oregon, Washington, Idaho, Western Montana, Utah, Nevada and Arizona. Hanshue is also secretary of the Los Angeles Motor Car Dealers' Association.

N. D. Wallace has been elected a director of the Michigan Copper & Brass Co., succeeding E. C. McCrone.

A. Thomas Schooley has become district manager for the Commerce Motor Car Co., and will have charge of Texas, Oklahoma, Kansas and Western Missouri.

L. C. Van Beaver has joined the Saxon Motor Car Corp. and will work as special assistant to H. W. Ford, president. He was formerly the head of the Willys-Overland Co. of England, which position he recently resigned.

Harry B. Kinsel is resigning from the Motor Products Corp. to join J. P. Ryerson & Son, Chicago.

W. C. Roth, purchasing agent of the Detroit Lubricator Co., has resigned his position and joined the United States Army. He will purchase supplies for the Signal Corps.

J. W. Thompkins of Chicago has been appointed manager of the Louis Geyler Automobile Co., Peoria, Hudson dealer. He succeeds Frank S. Cloud, who was promoted to a factory position.

Receiver for Smith Form-A-Tractor

CHICAGO, Oct. 7—Upon application of creditors having claims totaling $100,000, the Smith Form-A-Tractor Co. yesterday was placed in the hands of the Central Trust Co. as receiver. Creditors of the Smith Motor Truck Corp., a distinct concern, manufacturing the Smith Form-A-Truck, agreed to withhold their claims against the Smith Motor Truck Corp. for at least six months. The Smith Motor Truck Corp. is to be operated by a creditor's committeee. Its assets, according to President D. W. Figgis, are $1,634,786 in excess of the liabilities, which amount to $1,700,000.

Cold Weather Made Profitable

(*Continued from page* 94)

checked linoleum, and each exhibit *had rugs to match.* The covering of the floor with linoleum lent a rich air to the show. The whole thing resembled a "parlor show."

Every one of the dealers who exhibited declared himself well satisfied with the results of the show.

A set of rules and regulations governing the show obligated each dealer to show all the cars referred to in his application for space. The price of the floor space included the floor covering, decorations and janitor service.

No special lighting effects that would tend to destroy the uniformity of the show as a whole were permitted, and no accessory dealers were allowed space.

Motor World Figures in $1,300,000 Deal

Company Owning Motor World Buys 11-Story Building in Which Many U. P. C. Papers Are Published

NEW YORK, Oct. 6—Motor World has figured in one of the largest real estate deals ever recorded in connection with the business and technical press publication. The present home of Motor World at 239 West Thirty-ninth Street has been purchased by the United Publishers Corp., publishers of over twenty business, technical, trade, engineering and merchandising papers, such as Motor World, The Automobile and Automotive Industries, Motor Age, The Commercial Vehicle, El Automovil Americano, Transfer and Storage in the motor car line, and such other papers as Iron Age, Hardware Age, Dry Goods Economist, American Architect, etc. The property figuring in the deal is an eleven story building at 239 West Thirty-ninth Street, which has been largely occupied by the United Publishers Corp. for many years.



Motor World is on the sixth floor of the U. P. C. Building. There is a post office on the street floor. The basement and three floors are used by the printing and binding plant. Papers are edited, printed, bound, addressed, wrapped and shot right into the mail trucks in one progressive operation

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Car Exhibitors at New York Show

(*Continued from page 92*)

Main Floor—Automobile Section

Buick Motor Co.....Flint
Briscoe Motor Corp.....Jackson
Cadillac Motor Car Co.....Detroit
Chalmers Motor Co.....Detroit
Chandler Motor Car Co.....Cleveland
Chevrolet Motor Co. of Michigan.....Flint
Cole Motor Car Co.....Indianapolis
Dodge Brothers.....Detroit
H. H. Franklin Mfg. Co.....Syracuse
Grant Motor Car Corp.....Cleveland
Haynes Automobile Co.....Kokomo
Hudson Motor Car Co.....Detroit
Hupp Motor Car Corp.....Detroit
Kissel Motor Car Co.....Hartford, Wis.
Lexington-Howard Co.. ..Connersville, Ind.
Maxwell Motor Corp.....Detroit
Mitchell Motors Co., Inc.....Racine
National Motor Car & Veh. Corp.Indianapolis
Nash Motor Co.....Trenton, N. J.
Nordyke & Marmon Co., Inc....Indianapolis
Oakland Motor Car Co.....Pontiac
Olds Motor Works.....Lansing
Packard Motor Co.....Detroit
Paige-Detroit Motor Car Co.....Detroit
Pierce-Arrow Motor Car Corp.....Buffalo
Reo Motor Car Co.....Lansing
Saxon Motor Car Corp.....Detroit
F. B. Stearns Co.....Cleveland
Studebaker Corp. of America....South Bend
Velie Motors Corp.....Moline
Willys-Overland, Inc.....Toledo
Winton Co.....Cleveland

Second Floor—Automobile Section.

Allen Motor Co.....Fostoria, Ohio
Apperson Bros. Auto Co.....Kokomo, Ind.
Auburn Automobile Co.....Auburn, Ind.
J. I. Case T. M. Co.....Racine
Crow-Elkhart Motor Co.....Elkhart, Ind.
G. W. Davis Motor Car Co..Richmond, Ind.
Dort Motor Car Co.....Flint
Elkhart Carriage & Motor Co.....Elkhart
Empire Automobile Co.....Indianapolis
Fiat Automobile Co.....Poughkeepsie
Inter-State Motor Co.....Muncie, Ind.
Jackson Automobile Co.....Jackson
Jordan Motor Car Co.....Cleveland
King Motor Car Co.....Detroit
McFarlan Motor Co.....Connersville
Mutual Motors Co.....Jackson
Mercer Automobile Co.....Trenton, N. J.
Moline Automobile Co.....E. Moline, Ill.
Monroe Motor Co.....Pontiac
Moon Motor Car Co.....St. Louis
W. A. Paterson Co.....Flint
Peerless Motor Car Co.....Cleveland
Premier Motor Corp.....Indianapolis
Regal Motor Car Co.....Detroit
Scripps-Booth Corp.....Detroit
Stutz Motor Car Co. of America.Indianapolis
Westcott Motor Car Co.....Springfield

Third Floor—Automobile Section

Abbott Corp. .....Cleveland
American Motors Corp.....Plainfield, N. J.
Austin Automobile Co.....Grand Rapids
Columbia Motors Co.....Detroit
Elgin Motor Car Corp.....Chicago
Hal Motor Car Co.....Cleveland
Harroun Motors Corp.....Wayne, Mich.
Kline Car Corp.....Richmond, Va.
Lewis Spring & Axle Co.....Chelsea, Mich.
Liberty Motor Car Co.....Detroit
Monitor Motor Car Co.....Columbus
Roamer Motor Car Co.....Chicago
Standard Steel Car Co.....Pittsburgh
Stanley Motor Carriage Co....Newton, Mass.

Second Floor—Electric Cars

Anderson Electric Car Co.....Detroit
Baker R. & L. Co.....Cleveland
Milburn Wagon Co.....Toledo
Ohio Electric Car Co.....Toledo
Woods Motor Vehicle Co.....Chicago

Chicago Exhibitors

Coliseum Main Floor and Coliseum Annex

Allen Motor Co.....Fostoria
Apperson Bros. Automobile Co.....Kokomo
Auburn Automobile Co.....Auburn
Briscoe Motor Corp.....Jackson
Buick Motor Co.....Flint
Cadillac Motor Car Co.....Detroit
Case, T. M. Co., J. I.....Racine
Chalmers Motor Co.....Detroit
Chandler Motor Car Co.....Cleveland
Chevrolet Motor Co.....Flint
Cole Motor Car Co.....Indianapolis
Crow-Elkhart Motor Co.....Elkhart
Dodge Bros. .....Detroit
Dort Motor Car Co.....Flint
F-I-A-T Co. .....Poughkeepsie
Franklin Mfg. Co., H. H.....Syracuse
Grant Motor Car Co.....Findlay
Haynes Automobile Co.....Kokomo
Hudson Motor Car Co.....Detroit
Hupp Motor Car Co.....Detroit
Inter-State Motor Co.....Muncie
King Motor Car Co.....Detroit
Kissel Motor Car Co.....Hartford, Wis.
Lexington-Howard Co.....Connersville, Ind.
Maxwell Motor Co.....Detroit
Mercer Automobile Co.....Trenton, N. J.
Mitchell Motors Co.....Racine
Moon Motor Car Co.....St. Louis
Nash Motors Co.....Kenosha
National Motor Vehicle Co.....Indianapolis
Nordyke & Marmon Co.....Indianapolis
Oakland Motor Car Co.....Pontiac
Olds Motor Works.....Lansing
Packard Motor Car Co.....Detroit
Paige-Detroit Motor Car Co.....Detroit
Peerless Motor Car Co.....Cleveland
Pierce-Arrow Motor Car Co.....Buffalo
Premier Motor Corp.....Indianapolis
Reo Motor Car Co.....Lansing
Saxon Motor Car Co.....Detroit
Scripps-Booth Corp.....Detroit
Stearns Co., F. B.....Cleveland
Studebaker Corp. of America.....Detroit
Stutz Motor Car Co.....Indianapolis
Velie Motors Corp.....Moline
Willys-Overland, Inc.....Toledo
Winton Co. .....Cleveland

Greer Building—Automobile Section

Elgin Motor Car Corp.....Chicago
Harroun Motors Corp.....Detroit
Monitor Motor Car Co.....Columbus
Stanley Motor Carriage Co.....Newton

Accessories

New York

(*Continued from page 92*)

A-B-C Starter Co.....Detroit
American Bronze Co.....Berwyn, Pa.
American Ever Ready Wks.Long Island City
Anderson Forge & Machine Co.....Detroit
Au-to Compressor Co.....Wilmington, Ohio
Becker Bros.....Chicago
Benford Mfg. Co.....Mt. Vernon, N. Y.
Breeze Carbureter Co.....Newark, N. J.
Brown-Lipe-Chapin Co.....Syracuse
Brunner Mfg. Co.....Utica
Buda Co.....Harvey, Ill.
Budd Mfg. Co.....Philadelphia
Byrne, Kingston & Co.....Kokomo
Century-Plainfield Tire Co.....Plainfield
Champion Ignition Co.....Flint
Clark Equipment Co.....Buchanan, Mich.
Corbin Screw Corp.....New Britain
Corcoran-Victor Co.....Cincinnati, Ohio
Corning Glass Works.....Corning, N. Y.
Cowles & Co.....New Haven
Dann Products Co.....Cleveland
Detroit Pressed Steel Co.....Detroit
Dixon Crucible Co.....Jersey City
Doehler Die-Casting Co.....Brooklyn
Du Bois Piston Ring Co.....Albany
E. A. Laboratories, Inc.....Brooklyn
Eclipse Machine Co.....Elmira, N. Y.
Electric Storage Battery Co....Philadelphia
English & Mersick Co.....New Haven
Ericcson Mfg. Co.....Buffalo
Findelsen & Kropf Mfg. Co.....Chicago
Gabriel Mfg. Co.....Cleveland
Gemco Mfg. Co.....Milwaukee
General Electric Co.....Schenectady, N. Y.
Gould Storage Battery Co.....New York
Gray & Davis, Inc.....Boston
Hale & Kilburn Co.....Philadelphia
Halladay Co., L. P.....Philadelphia
Harrison Radiator Corp....Lockport, N. Y.
Hartford, Inc., Edward V.....Jersey City
Hartford Machine Screw Co.....Hartford
Hassler, Robert H.....Indianapolis
Hayes Mfg. Co.....Detroit
Hayes Wheel Co.....Jackson
Heinze Co., The John O....Springfield, Ohio
Heinze Electric Co.....Lowell, Mass.
Herz & Co.....New York
Janney-Steinmetz & Co.....Philadelphia
Kellogg Mfg. Co.....Rochester
Kent Mfg. Works.....Philadelphia
Klaxon Co.....Newark, N. J.
Light Mfg. & Foundry Co.....Pottstown
Lipman Air Appliance Co.....Beloit
Mann Co., F. W.....Milford, Mass.
Merchant & Evans Co.....Philadelphia
Metal Stamping Co.....Long Island City
Miller Transmission Co.....New York
Morse Chain Co.....Ithaca, N. Y.
Mosler & Co., A. R...Mount Vernon, N. Y.
Moto-Meter Co., Inc., The..Long Island City
National Carbon Co.....Cleveland
New York Coil Co.....New York
Pantosote Co., The.....New York
Parker Rust Proof Co. of America...Detroit
Parry Mfg. Co.....Indianapolis
Philips-Brinton Co.....Kennett Square, Pa.
Piel Co., The G.....Long Island City
Rand Mfg. Co.....Haverill, Mass.
Raybestos Co., The.....Bridgeport
Rex Mfg. Co.....Connersville
Rowe Calk Co., The.....Hartford
Schrader's Son, Inc., A.....Brooklyn, N. Y.
Shakespeare Co.....Kalamazoo
Shaler Co., C. A.....Waupun, Wis.
S. K. F. Ball Bearing Co.....Hartford
Sparks-Withington Co., The.....Jackson
Splitdorf Electrical Co.....Newark, N. J.
Standard Welding Co., Division Standard Parts Co.....Cleveland
Standard Woven Fabric Co..Walpole, Mass.
Stewart-Warner Speedometer Corp..Chicago
Stromberg Motor Devices Co.....Chicago
Superior Lamp Mfg. Co., Inc.....New York
Syracuse Malleable Iron Works (Smith Wheel Co., Inc.).....Syracuse
Taft-Pierce Mfg. Co.....Woonsocket, R. I.
Universal Shock Eliminator, Inc..New York
Vacuum Oil Co.....New York
Van Sicklen Co., The.....Elgin
Veeder Mfg. Co., The.....Hartford
Voorhees Rubber Mfg. Co.....Jersey City
Waltham Watch Co.....Waltham
Warner Lens Co.....Chicago
West Side Foundry Co.....Troy, N. Y.
Wheeler-Schebler Carbureter Co., Inc., The .....Indianapolis
Willard Storage Battery Co., The..Cleveland
Wilson & Co.....Chicago
C. R. Wilson Body Co.....Detroit
Woodworth Mfg. Corp., The..Niagara Falls
Zenith Carburetor Co., The.....Detroit

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Boston Dealers Open Closed Car Show Week

Whole Row Is Participating in Fall Exhibition—Individual Showrooms Decorated

BOSTON, Oct. 6—Boston inaugurated a closed car show week beginning this evening and it will continue all through the next week. As next Friday, Columbus Day, is a state holiday, it is expected that it will be the big day of the week, for many out-of-town motorists and dealers will come here for the show.

Salesrooms are being kept open from 10 in the morning until 10 at night, and many of them have special decorations inside featuring their closed models. The buildings are decorated outside, even the truck and tire firms sharing in this work. Many places are illuminated at night outside, making the buildings very attractive.

The show is being held in the individual salesrooms instead of in one building, and the work is being directed by committees of the Boston Automobile Dealers' Association. John H. Johnson of the Buick is chairman of the general committee that perfected the plans. Chester I. Campbell, who manages the big motor shows, worked out the details with him and many of the prominent dealers were chairmen of committees that attended to various matters.

Cold Weather Made Profitable

Cassidy Men at Convention

NEW YORK, Oct. 6—The Edward A. Cassidy Co. called in all of its territorial sales heads for a convention which began on Monday, September 24, and continued through Saturday, September 29. The Cassidy company, which is planning a particularly aggressive effort during the winter and for 1918, decided on a preparedness campaign, every territory being represented by its responsible head and a complete canvass made of national and local business conditions, with particular reference to the character of accessories sold through the company. These include the Conaphre, G. P. Muffler Cut-out, the Long Horn, the Cassco Tire Pump, the Kimball Auto Jack and the Tenion piston ring.

The program was varied on Thursday of the convention week by the introduction of publication representatives, who discussed the company's advertising. Frank Lovejoy of the Curtis Publishing Co. spoke on the effect of advertising in the general mediums, and John Splain of the Class Journal Co. took for his topic the effect on the trade and the industry of advertising done in the trade papers and its especial value to the salesmen representing the company. L. M. Lloyd, advertising manager of the Cassidy organization, outlined the campaign for the new season, including general magazines, trade papers and direct literature, dwelling at some length on the reasons behind the choice of each medium.

Edward A. Cassidy, the president, reviewed trade conditions, his talk being based on analyses of the whole field, and followed it with a "pep" talk that clinched the general feeling of optimism into sureness. This was the first organized sales convention held by the Cassidy Company, and its effect has been such as to make the officers enthusiastic for its frequent repetition.

Cold Weather Made Profitable

Boston's Unique Plan To Sell Liberty Bonds

BOSTON, Oct. 6—The Boston Automobile Dealers Association has evolved a plan for a Liberty Loan drive which bids fair to be very successful. The various dealers have agreed to send out every day in the week one or two members of the sales staffs who will do nothing but canvass for Liberty Bonds throughout the city. As there are more than 100 dealers in Boston this means that there will be scores of motor salesmen selling bonds every day until the sales close. The men will not try to talk automobiles or anything else. They will be given instructions before starting and they will work in various sections so that they will not cover territory where others have worked. A committee has worked out the details and the salesmen are now out on their new jobs.

Cold Weather Made Profitable

Toledo Holding Enclosed Car Show

TOLEDO, OHIO, Oct. 9—The first enclosed car show of the Toledo Automobile Dealers' Association opened at 7.30 this evening in the Coliseum. The entire floor space is occupied and the dealers are displaying lines of attractive winter models. The show is being managed by V. G. Kibby, secretary of the association and manager of the Toledo used car appraisal station.

Unlimited Oil Supply at Present in Mexico

Ninety Per Cent Controlled by U. S. and England—Two Months' Shipments 3,000,000 Tons

WASHINGTON, Oct. 6—The Mexican government, making official denial of German influence in connection with the handling of oil from Mexico, says the only limit to exportations of oil is the availability of vessels for transportation; that ninety-nine per cent of the production and shipment is under American and British control, solely; that there are now in storage many millions of barrels awaiting shipment, and that Americans and Englishmen are shipping all they can handle, having in reserve immense stocks, while their potential and immediately available production is incalculable.

The Secretary of the Treasury of Mexico announces that the exportations of petroleum for the months of August and September, the complete returns from which are not yet in, will exceed those for June and July, which amounted to upward of two million tons. Complete returns for August and September are expected to approximate three million tons.

Cold Weather Made Profitable

California Jobber Changes Name

SACRAMENTO, Oct. 6—The Putzman-Bowman Co., has been succeeded by the Bowman Auto Supply Co. Mr. Bowman has purchased the interest of Mr. Putzman and will hereafter conduct the business.

Cold Weather Made Profitable

Lindsey Oklahoma President

OKLAHOMA CITY, Oct. 6—S. S. Lindsey of the Buick Motor Co. has been elected president of the Oklahoma City Motor Car Dealers' Association.

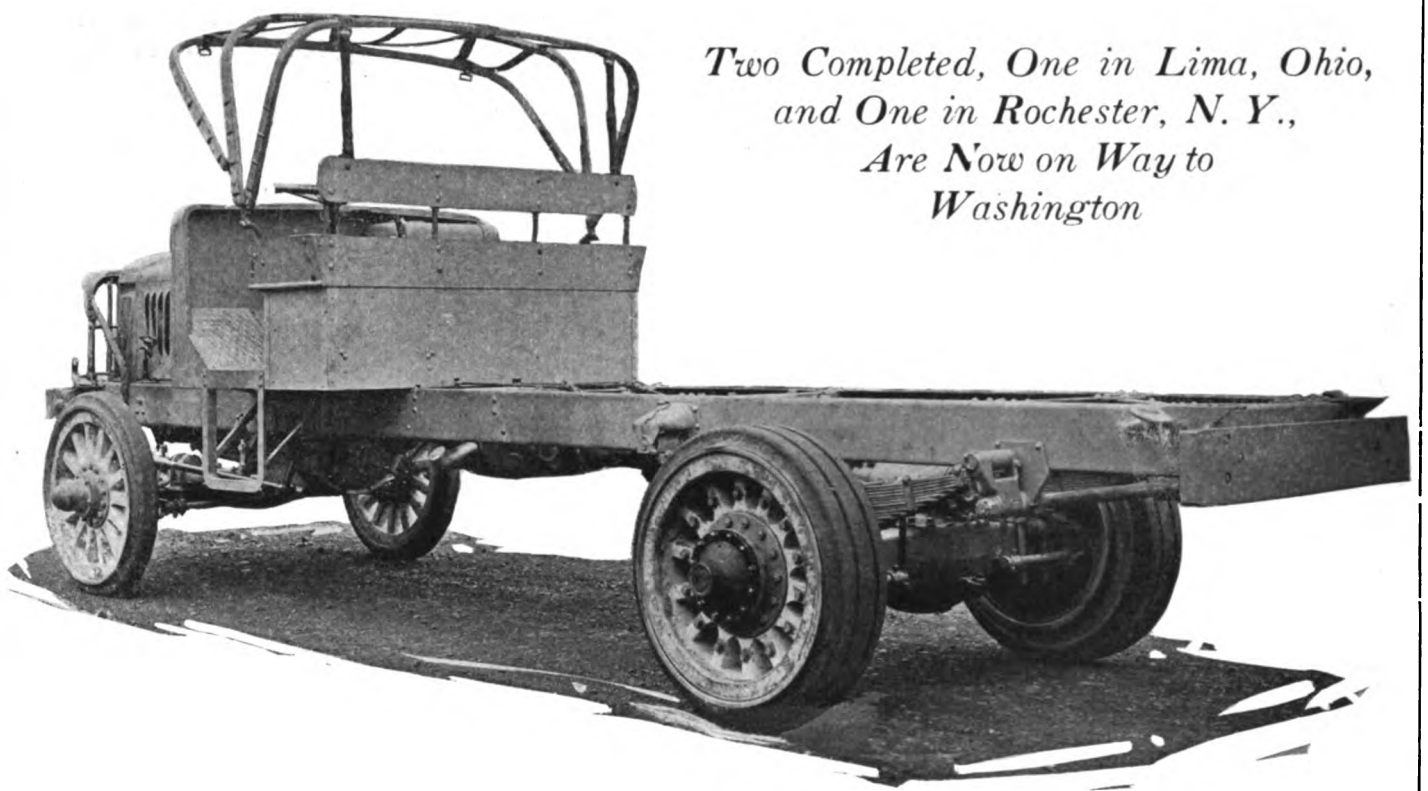


Sales organization of the E. A. Cassidy Co.—Standing, from left to right—E. H. Vogt, E. C. Wright, F. W. Carry, J. K. Gilchrist, A. O. Perlitz, J. W. Klag, H. S. Lyman, C. F. Conn. Sitting, left to right—L. M. Lloyd, Adv. Mgr.; C. P. Brewster, G. B. Gosman, Secretary; E. A. Cassidy, President; R. H. Sleicher, R. G. Ames and A. L. Martin

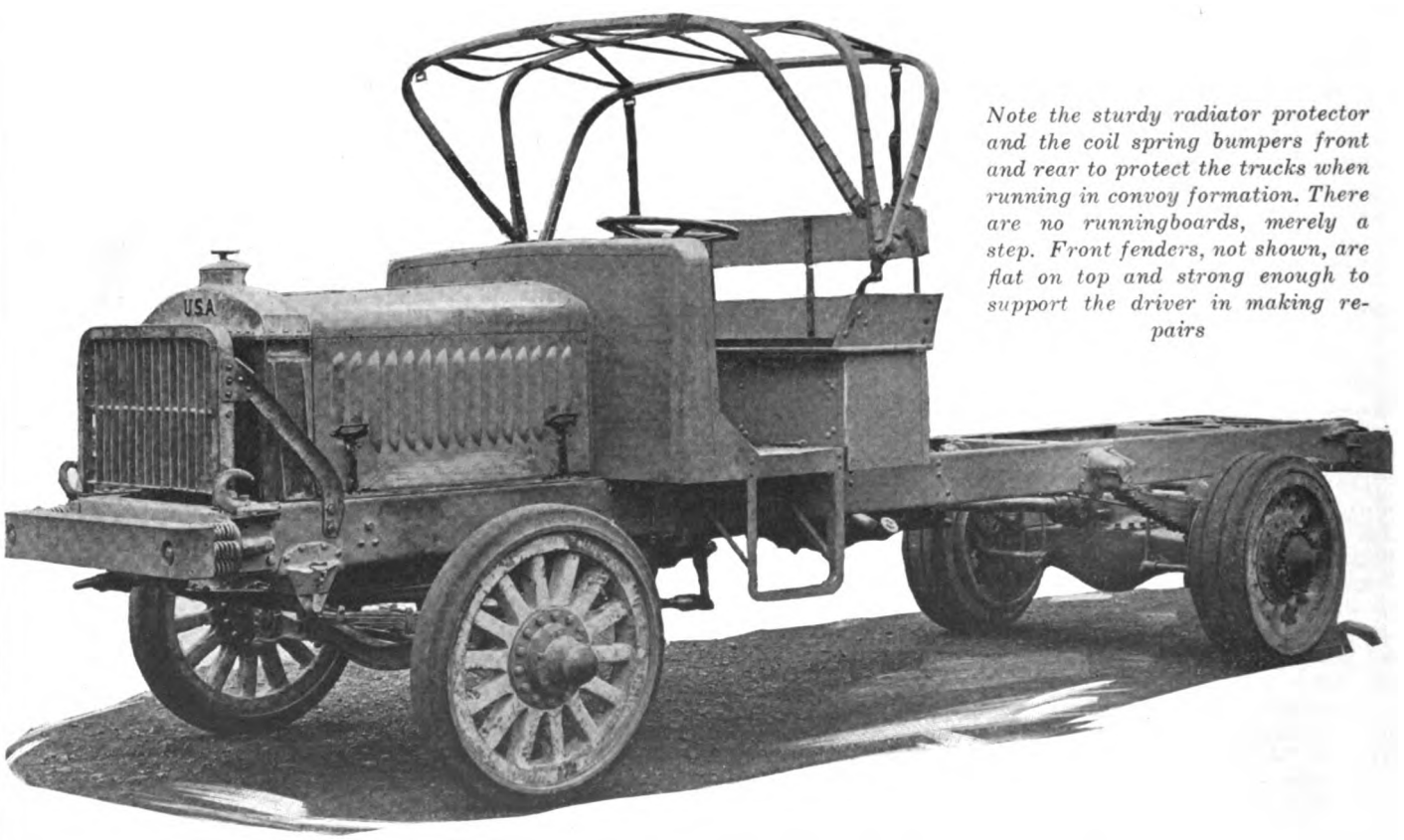
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First Class B Government Truck

Two Completed, One in Lima, Ohio, and One in Rochester, N. Y., Are Now on Way to Washington



Thirty-five thousand of these standardized Class B army trucks will be made from this model. The assembly was completed in 3 days and 3 nights and the truck will now be driven 20,000 miles over the roads as a test before parts are put through in quantities. This first truck was completed Sunday, Oct. 7



Note the sturdy radiator protector and the coil spring bumpers front and rear to protect the trucks when running in convoy formation. There are no runningboards, merely a step. Front fenders, not shown, are flat on top and strong enough to support the driver in making repairs

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Redden to Market Tractors

CHICAGO, Oct. 6—C. F. Redden, president and founder of the Redden Motor Truck Co., has relinquished all his holdings in the company and severed his connection with it. He will devote his entire attention to the perfection of a sales organization to market a popular-priced farm tractor in which he is interested.

Cold Weather Made Profitable

U. S. Earnings $7,239,966

NEW YORK, Oct. 8—The largest earnings in the history of the United States Rubber Co. are reported in the first 6 months' statement of this year. During that period the company earned $7,239,966, an increase of 53 per cent over the same period of 1916, when $4,920,650 was earned. The 1917 earnings are after deducting $500,000 for special war tax. The earnings are at the annual rate of $14,479,932, or $27 a share for the $36,000,000 common stock after deducting dividends of $4,800,000 on the $60,000,000 preferred stock. The company earned $15.12 on the same amount of stock in 1916. Business for July, August and September is running at the same rate as for the first 6 months.

Motor Car Securities Quotations

	Oct. 6, 1917 Bid	Asked
*Ajax Rubber Co	59	62
*J. I. Case T. M. Co. pfd	80	82
Chalmers Motor Co. com	2	5
Chalmers Motor Co. pfd	..	..
*Chandler Motor Co	72	74
Chevrolet Motor Co	78	82
*Fisher Body Corp. com	25	35
*Fisher Body Corp. pfd	83	88
Fisk Rubber Co. com	60	65
Fisk Rubber Co. 1st pfd	102	105
Fisk Rubber Co. 2nd pfd	90	95
Firestone Tire & Rub. Co. com	109	111
Firestone Tire & Rub. Co. pfd	100	103
*General Motors Co. com	96	98
*General Motors Co. pfd	78	79
*B. F. Goodrich Co. com	43	44
*B. F. Goodrich Co. pfd	100	101
Goodyear Tire & Rub. Co. com	178	182
Goodyear Tire & Rub. Co. pfd	100	102
Grant Motor Car Corp	2½	3½
Hupp Motor Car Corp. com	2¼	3
Hupp Motor Car Corp. pfd	82	88
International Motor Co. com	8	15
International Motor Co. 1st pfd	..	50
International Motor Co. 2nd pfd	15	30
*Kelly-Springfield Tire Co. com	41½	43
*Kelly-Springfield T. Co. 1st pfd	85	90
*Lee Rubber & Tire Corp	17½	18½
*Maxwell Motor Co., Inc., com	32	34
*Maxwell Motor Co., Inc., 1st pfd	64	67
*Maxwell Motor Co., Inc., 2nd pf	19¾	20½
Miller Rubber Co. com	173	178
Miller Rubber Co. pfd	100	102
Packard Motor Car Co. com	143	148
Packard Motor Car Co. pfd	94	98
Paige-Detroit Motor Car Co	23	25
Peerless Truck & Motor Corp	9	12
Portage Rubber Co. com	121	126
Regal Motor Car Co. pfd	15	20
†Reo Motor Car Co	25½	26½
*Saxon Motor Car Corp	12	13
Standard Motor Construction Co.	9	10
Standard Parts Co	..	78
*Stewart-Warner Speed. Corp	60½	61½
*Studebaker Corp. com	44	45
*Studebaker Corp. pfd	..	90
Swinehart Tire & Rubber Co	42	47
United Motors Corp	23	23¼
*U. S. Rubber Co. com	57½	58
*U. S. Rubber Co. pfd	100	102
*White Motor Co	42	43
*Willys-Overland Co. com	25½	25¾
*Willys-Overland Co. pfd	87½	88

*At close Oct. 6, 1917. Listed N. Y. Stock Exchange.
†Par value, $10.

Coming—THE SHOW CALENDAR—*Events*

Shows

Wichita, Kan	Show, International Wheat Congress, Automobile & Accessory Dealers' Assn.	Oct. 1-13
Cincinnati, O	Eighth Annual, Cincinnati Automobile Dealers' Assn., Music Hall. H. K. Shockley, Gen. Mgr.	Oct. 6-13
Boston, Mass	Closed Car Show, Boston Automobile Dealers' Assn., various salesrooms. Chester I. Campbell, Mgr.	Oct. 6-13
Fort Smith, Ark	Automobile Dealers' Assn. of Ft. Smith.	Oct. 8-13
St. Louis, Mo	Open Week, St. Louis Automobile Mnfrs. & Dealers' Assn. R. E. Lee, Mgr.	Oct. 8-13
Toledo	Closed Car Show, Toledo Automobile Dealers' Assn., Coliseum. V. G. Kibby, Mgr.	Oct. 9-12
Pittsburgh, Pa	Automobile Dealers' Assn. of Pittsburgh, Motor Square Garden. John J. Bell, Mgr.	Oct. 13-20
Dallas, Tex	Dallas Automobile & Accessory Dealers' Assn., State Fair. S. I. Munger, Mgr.	Oct. 13-28
Atlanta, Ga	Southeastern Fair, Atlanta Automobile Trade Assn.	Oct. 14-20
Columbus, O	Columbus Auto Show Co., State Fair Grounds; J. P. Gordon, Chairman of Committee.	Oct. 18-27
Syracuse, N. Y	First Annual Closed Car Show, State Armory, Syracuse Automobile Dealers' Assn.	Oct. 22-26
Worcester, Mass	Casino and Bancroft Hotel, United Shows Co. E. H. Winchell, Publicity Manager.	Oct. 22-29
Los Angeles, Cal	Motor Car Dealers Assn., Billy Sunday Tabernacle. J. S. Conwell, Mgr.	Nov. 12-17
Denver, Col	Automobile Trades Assn., Show Committee, Auditorium. G. A. Wahlgreen, Mgr.	Nov. 12-18
Springfield, Mass	Auditorium Building, United Shows Co.	Dec 3-9 1918
Ft. Dodge, Ia	Ft. Dodge Auto Dealers' Assn. G. W. Tremain, Mgr.	January
New York, N. Y	Eighteenth Annual, Automobile Chamber of Commerce, Grand Central Palace.	Jan. 5-12
Washington, D. C	Carnival and Open House Week, Automobile Trade Assn. of Washington.	Jan. 11-18
Providence, R. I	R. I. Licensed Auto. Dealers' Assn., State Armory. Percival S. Clark, Mgr.	Jan. 11-19
New York, N. Y	Motor Boat Show, Grand Central Palace, National Assn. of Engine & Boat Manufacturers.	Jan. 19-26
Montreal, Can	National Motor Show of Eastern Canada, Montreal Automobile Trade Assn.	Jan. 19-26
Scranton, Pa	Scranton Motor Trades Assn., Armory. Hugh B. Andrews, Mgr.	Jan. 21-26
York, Pa	York Auto Dealers' Assn., Queen St. Tabernacle. T. F. Pfeiffer, Sec.	Jan. 21-26
Allentown, Pa	Lehigh Auto. Trade Assn., Traylor Motor Co.'s Garage. P. W. Leisering, Publicity Mgr.	Jan. 23-28
Chicago, Ill	Eighteenth Annual, Coliseum and Armory, National Automobile Chamber of Commerce.	Jan. 26-Feb. 2
Philadelphia, Pa	Seventeenth Annual, Philadelphia Auto. Trade Assn., Commercial Museum Bldg.	Jan. 11-19
Milwaukee, Wis	Milwaukee Automobile Trades, Inc., Auditorium; Bart J. Ruddle, Mgr.	Jan. 18-24
Portland, Ore	Motor Car Dealers' Assn., Armory. Jos. M. Rieg, Mgr.	Jan. 21-26
Manchester, N. H	Academy. Couture Bros	Jan. 28-Feb. 2
Mifflintown, Pa	Automobile Trade Assn., Valley Stream Auditorium.	Jan. 22-26
Minneapolis, Minn	Minneapolis Auto. Trade Assn., Walter B. Wilmot, Mgr.	Feb. 2-9
Kansas City, Mo	Kansas City Motor Car Dealers' Assn., E. E. Peake, Mgr.	Feb. 9-16
St. Louis, Mo	St. Louis Auto Mnfrs. & Dealers' Assn. Robert E. Lee, Mgr.	Feb. 11-16
Syracuse, N. Y	Syracuse Automobile Dealers' Assn., State Armory. Harry T. Gardner, Mgr.	Feb. 18-23
Springfield, O	Springfield Auto Trades Assn., Memorial Hall. C. S. Burke, Mgr.	Feb. 18-23
Pittsfield, Mass	State Guard, State Armory. James J. Callagan, Mgr.	Feb. 18-23
So. Bethlehem, Pa	Fourth Annual (cars 18-23; trucks 25-27), Coliseum. J. L. Elliot, Mgr.	Feb. 18-27
Newark, N. J	N. J. Auto Exhibition Co., First Regiment Armory. Claude E. Holgate, Mgr.	Feb. 16-23
Cedar Rapids, Ia	Cedar Rapids Auto. Trade Assn., Auditorium.	March
Kalamazoo, Mich	Kalamazoo Automobile Dealers' Assn., Armory.	March
Omaha, Neb	Omaha Auto. Trade Assn., Auditorium, Clarke G. Powell, Mgr.	Feb. 23-Mar. 2
Boston	Boston Automobile Dealers Association. Mechanics Building, Chester I. Campbell, manager.	Mar. 2-9
San Francisco, Cal	Motor Truck Dealers of San Francisco, Auditorium. Ivan R. Gates.	Mar. 19-24
Trenton, N. J	Trenton Auto Trade Assn., Second Regiment Armory. John L. Brock, Mgr.	Mar. 20-23
Stockton, Cal	San Joaquin Auto Trade Assn. Samuel S. Cohn, Mgr.	Apr. 9-13

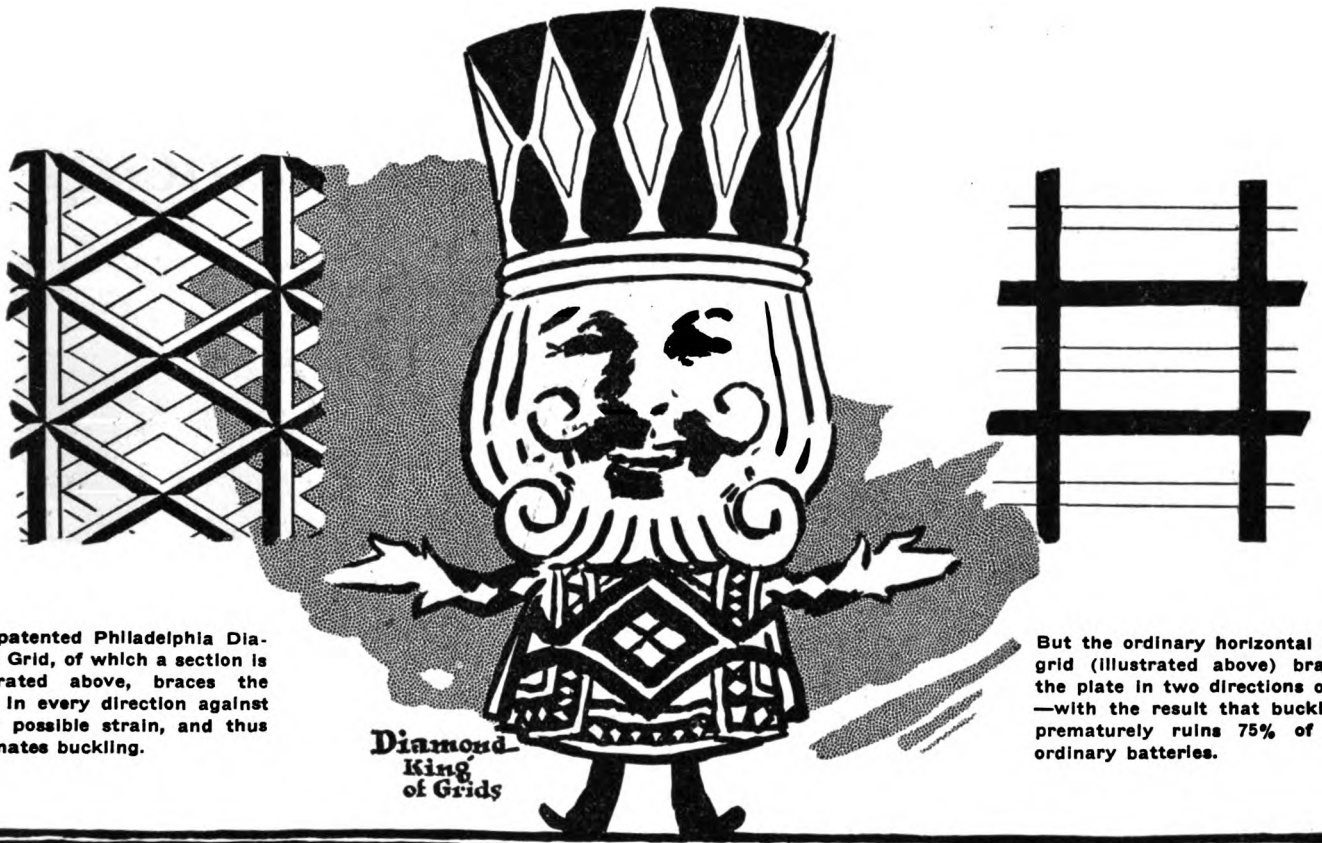
General and Racing

Chicago, Ill	Race	Oct. 13
Richmond, Va	Track Races, Virginia State Fair. H. P. Murphy, Director of Contests.	Oct. 13
Columbus, O	Dixie Highway Tour	Oct. 24
New York, N. Y	Races, Sheepshead Bay Speedway	Oct 27 1918
New York	Convention, National Assn. of Auto. Accessory Jobbers, Hotel Astor. Astor.	Jan. 11-16

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Keep a Check on Yourself

THINGS I AM GOING TO DO	OCT.		NOV.		DEC.		JAN.		FEB.	
	DATE	WHAT I DID	DATE	WHAT I DID	DATE	WHAT I DID	DATE	WHAT I DID	DATE	WHAT I DID



The patented Philadelphia Diamond Grid, of which a section is illustrated above, braces the plate in every direction against every possible strain, and thus eliminates buckling.

But the ordinary horizontal bar grid (illustrated above) braces the plate in two directions only—with the result that buckling prematurely ruins 75% of all ordinary batteries.

Just Look at the Difference

That greatest of all battery troubles—buckling of plates—is eliminated by the celebrated Diamond Grid used exclusively in the

PHILADELPHIA DIAMOND GRID BATTERY

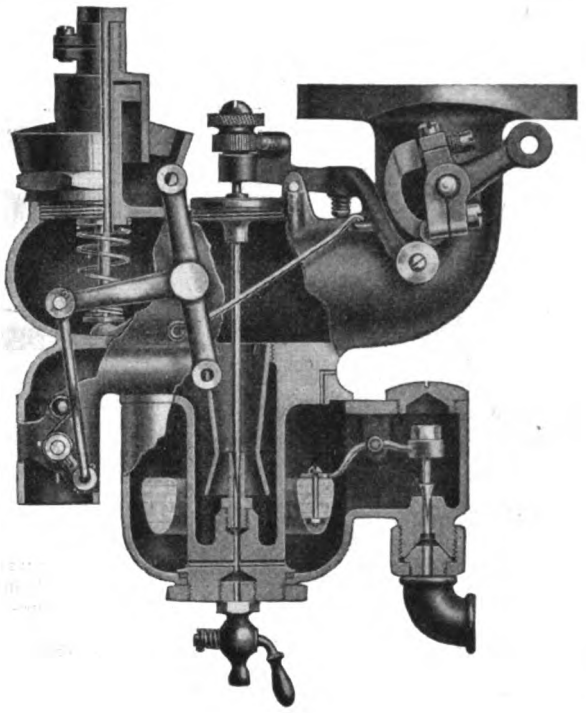
Better plates plus better insulation (made of quarter-sawed hard wood, no substitutes) give this battery 40% longer life. Yet its construction is so simple that it costs no more than ordinary makes. Write our nearest branch for details.

PHILADELPHIA STORAGE BATTERY COMPANY

DEPT. A—ONTARIO AND C STS.—PHILADELPHIA, PA.

Atlanta, Ga., 128 W. Peachtree St.
Boston, Mass., 90-92 Brookline Ave.
Chicago, Ill., 1621 S. Michigan Ave.
Cleveland, Ohio, 613 Citizens Bldg.
Columbus, Ohio, 318 New First Natl. Bank Bldg.
Huntington, W. Va., Huntington Hotel.
Los Angeles, Cal., 1105 W. Pico St.
New York, N. Y., 1789 Broadway.
Richmond, Va., 1623 W. Broad St.
Rochester, N. Y., 30-40 Carlton St.
St. Louis, Mo., 5189 Delmar Blvd.
Washington, D.C., 2155 Champlain Ave.

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Announcing the VAN CARBU

The Same Principle for All Motors

The VanBriggle Carburetor, announced now for the first time, has been perfected and under actual working tests for about three years. Thus, although new to the general public, its advantages and economies are established and proved.

Except for the size of the carburetor, and its type (vertical or horizontal), each VanBriggle Carburetor is exactly *the same* regardless of the number of cylinders or horse-power of the motor which it serves—and regardless of whether it is used on pleasure car, truck or tractor.

One principle of carburetion—and one only—is used in all VanBriggle Carburetors. It is the right principle. And instead of changing the principle to meet the needs of various motors and compressions—we cling to the *one right principle* of carburetion under all conditions, and adjust the carburetor to meet them.

Two very important features of the VanBriggle Carburetor are these: The peculiar construction of the primary air chambers—this construction assuring an absolute mixture of the primary air and gasoline, and vaporizing it more completely, we believe, than any other carburetor. The relative positions of the auxiliary air, the gasoline nozzle and the manifold, which force the auxiliary air to TRAVEL THROUGH the primary mixture to reach the manifold—assuring a *second* complete mixture.

Study the sketches in the center of this page. The soundness of the VanBriggle principle, as compared with others, will then be apparent to you.

A further study of the VanBriggle Carburetor will reveal other points of excellence, will make fully clear the wonderful adaptability and efficiency of the VanBriggle Carburetor on all motors, and will help to establish the reasonableness of the unusual claims made for its performance by its users in various fields.



The VanBriggle Way

On all speeds and loads, the VanBriggle Carburetor assures TWO mixtures.

FIRST—There is a complete and thorough mixture and vaporization in the venturi tube (V). Because of the peculiar construction of the primary air chambers, the primary air (PA) enters the venturi tube with a whirling, swerving movement, breaking even the poorest gasoline into the most minute particles.

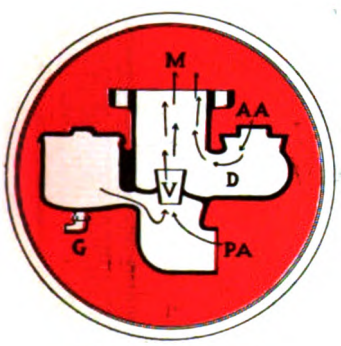
SECOND—The mixture of primary air and gasoline (G) whirls up through the venturi tube (V), being discharged into the mixing chamber (D)—on its way to the manifold (M). The auxiliary air traveling from (AA) across to the manifold (M) *must pass through the primary mixture.* This produces a *second* mixture. The principle is the same in the horizontal type, in which the manifold would be at the point (Z).

TO THE TRADE—Accessory dealers and garage operators will find a new source of profit in the Van Briggle Carburetor. There is a vertical and horizontal style in each of five sizes. With these you can meet any need of any customer instantly—on pleasure car, truck or tractor. New profits—and real service! Write us for literature, prices and name of your distributor.

The VanBriggle
INDIANAPOLIS

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VanBRIGGLE CARBURETOR



The Other Way

Other methods of carburetion are illustrated in the sketch above.

Here you will see the manifold (M) directly above the venturi tube (V). The primary air (PA) and gasoline (G) are sucked directly upward, the direct upward pull tending to keep them in parallel lines — without the whirling which is achieved in the VanBriggle.

The sketch above shows the primary air and gasoline passing straight up into the manifold. The auxiliary air (AA) is merely sucked along the upper wall of the mixing chamber (D) and upward into the manifold (M). It does not pass through the primary air and gasoline, but proceeds into the manifold almost as a segregated current. The very force which moves it (the suction from above) tends to keep these currents apart rather than to throw them together.

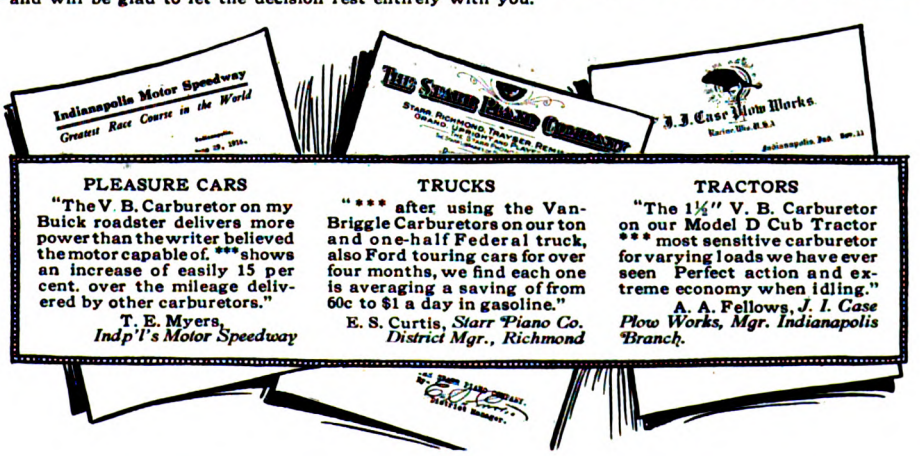
Users Prove Superiority in Actual Service

The real measure of the efficiency of the VanBriggle Carburetor is found in the results obtained in actual service. When used on pleasure cars, owners say the VanBriggle Carburetor gives them from 15 to 100 per cent. more mileage—this wide variation due to varying conditions of use. On trucks and tractors the tests show wonderfully increased power and lower fuel consumption.

Even low-test gasoline responds manfully to the occasion when the VanBriggle Carburetor is used. And in addition to the economy resulting from increased power or mileage, users emphasize strongly the smoother-running motor, the greater flexibility and the quick response in starting—regardless of weather or climatic conditions.

GUARANTEE

VanBriggle Carburetors are sold under a broad guarantee of "Satisfaction—or Your Money Back." We know you won't be satisfied unless your VanBriggle does better than the carburetor you are now using—and will be glad to let the decision rest entirely with you.



PLEASURE CARS

"The V. B. Carburetor on my Buick roadster delivers more power than the writer believed the motor capable of. *** shows an increase of easily 15 per cent. over the mileage delivered by other carburetors."

T. E. Myers,
Indp'l's Motor Speedway

TRUCKS

"*** after using the VanBriggle Carburetors on our ton and one-half Federal truck, also Ford touring cars for over four months, we find each one is averaging a saving of from 60c to $1 a day in gasoline."

E. S. Curtis, *Starr Piano Co. District Mgr., Richmond*

TRACTORS

"The 1½" V. B. Carburetor on our Model D Cub Tractor *** most sensitive carburetor for varying loads we have ever seen Perfect action and extreme economy when idling."

A. A. Fellows, *J. I. Case Plow Works, Mgr. Indianapolis Branch.*

Motor Device Co.

INDIANA, U.S.A.

TO OWNERS—Write us for illustrated folder giving fuller details of the construction and operation of the Van Briggle Carburetor, together with statements of other owners concerning the performance of the VanBriggle Carburetor in actual service. We will also tell you where the VanBriggle Carburetor may be purchased in your city, or, pending the establishment of a dealer there, will arrange to supply you direct.

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Sooner—or later
Which?

Sooner or later, *every* successful automobile selling for more than $1,000 will be equipped with an automobile clock.

The manufacturer who adopts an automobile clock "sooner" has a distinct selling advantage over his competitors who wait until "later."

There is only one accurate and reliable automobile clock made—the Waltham. It requires a clock of very special design and construction to triumph over the conditions of motoring. The Waltham is the one clock built for the purpose.



Waltham Automobile Clock

These great cars are already Waltham equipped:

Brewster	Crane-Simplex	Locomobile	††Pierce-Arrow
Cadillac	Detroit-Electric	Marmon	Rauch & Lang
*Chalmers	Franklin	Mercer	Stearns
†Cole	Haynes-12	Owen Magnetic	Winton
	**Hudson	Packard	

*Limousine, Landaulet
†Sedan, Coupe
**Limousine, Landaulet, Town Car, Landaulet-Limousine
††Enclosed bodies

WALTHAM WATCH COMPANY, WALTHAM, MASS.

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STEPHENS *Salient Six*

With Perfected Overhead-Valve Engine

The Unsolicited Opinion of an experienced automobile judge—prejudiced at the start against the *Stephens Salient Six*—is worth more in shaping your opinion of this 1918 marvel of automobile engineering than anything we can say in its behalf.

Read the accompanying letter—the frank, unsought statement of a man who has known automobiles thoroughly ever since they became a real factor in daily business and pleasure:

Stephens Motor Branch,
Moline, Ill.

Chicago, Ill., June 30th, 1917.

Gentlemen:

I had the pleasure of riding in the "Salient Six" at Freeport last week and wish to congratulate you on the wonderful performance of the car. You have certainly established the fact that the power of a motor is not altogether in the size of the bore and stroke.

Being a pioneer in the automobile business, having served with the ——— company for ten years in the capacity of factory representative, gave me an opportunity of becoming familiar with almost every make on the market. There was a time when I believed that the ——— motor was the best motor built in the United States, and I still have great respect for the ——— car, but after riding in the Stephens I must acknowledge it is the most wonderful motor I have ever ridden behind.

While out in the car we drove over a certain hill which I had driven over many times in my ——— Six. While I did not mention the fact to your driver, to be fair with you I wish to state that in order to make the same hill on high with the ——— I was obliged to approach the hill at at least 25 miles per hour and could gain no speed on the hill.

The Stephens started at the foot of the hill at five miles per hour and finished at the top at thirty-five. While I claim to be as well posted in automobiles as any man in the game, I am at a loss to understand how your motor develops such wonderful speed and power as it does. The motor certainly delivers the goods.

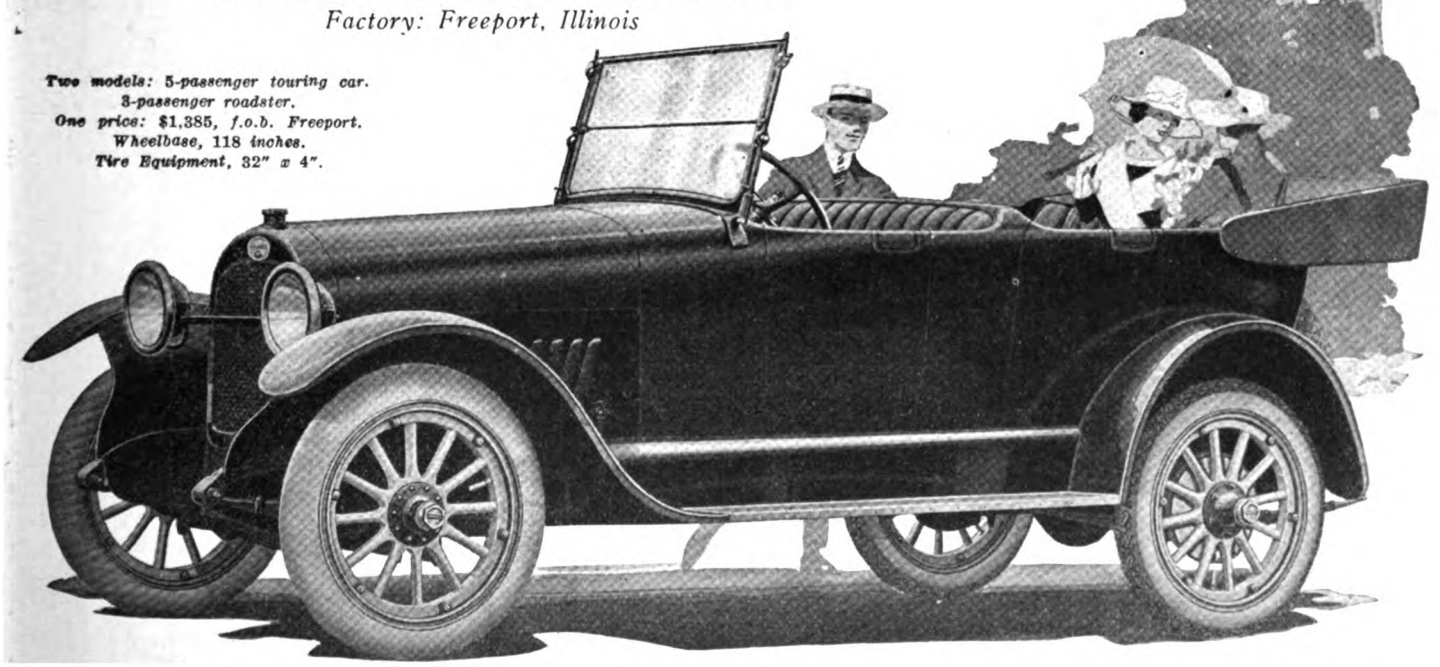
Very truly yours,
Rochford Motor Co.
T. J. Rochford.

A few choice territories are open to dealers desirous of identifying themselves with a great progressive manufacturing principle backed by 52 years' successful experience and $19,000,000 in paid-up capital.

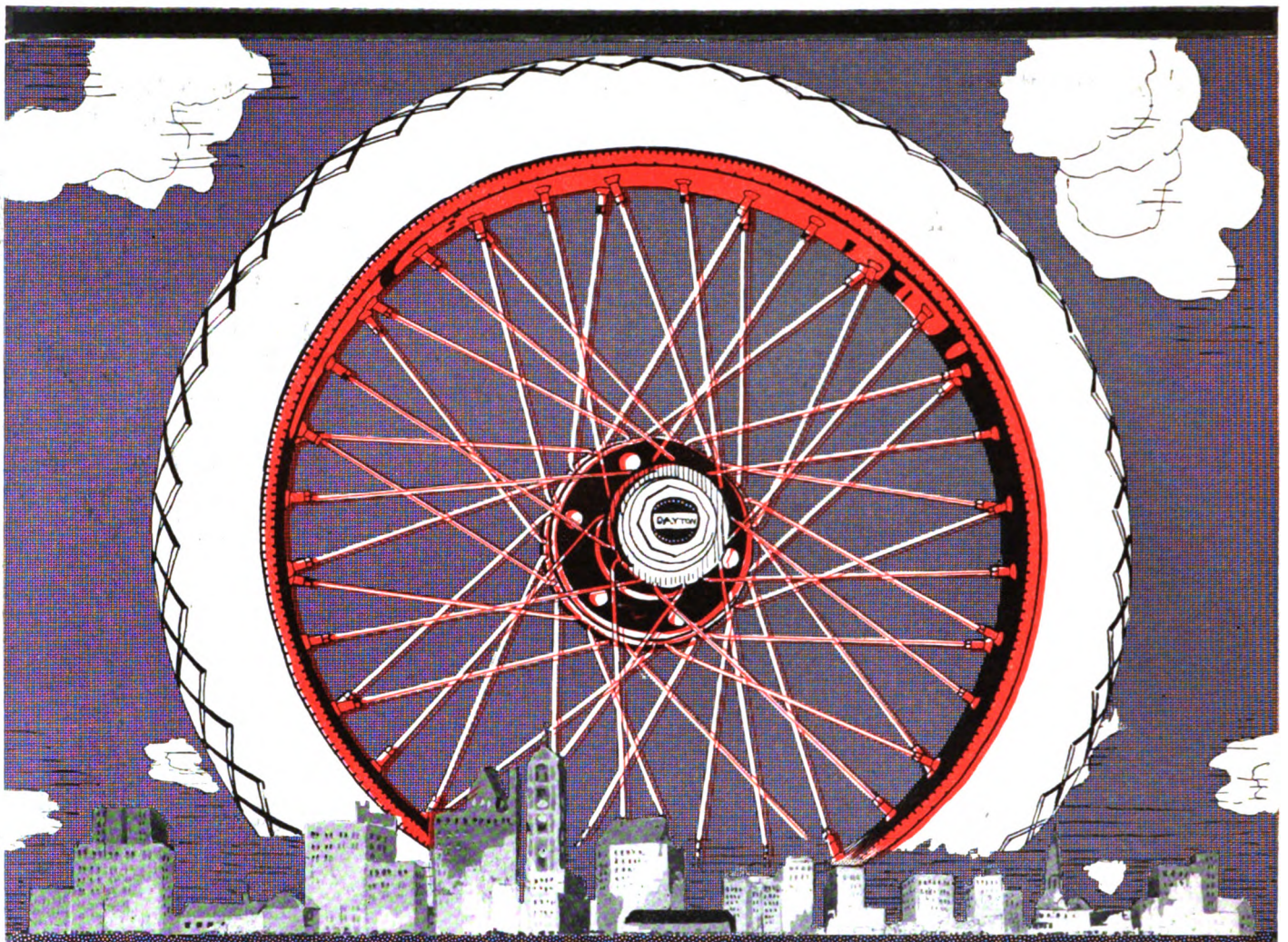
Stephens Motor Branch
of Moline Plow Co., *Moline, Illinois*

Factory: Freeport, Illinois

Two models: *5-passenger touring car.*
3-passenger roadster.
One price: *$1,385, f.o.b. Freeport.*
Wheelbase, *118 inches.*
Tire Equipment, *32" x 4".*



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DAYTON
Quick Detachable WIRE WHEELS
MADE UNDER LICENSE
For Ford Cars

THE PEER OF THEM ALL!

Dayton Wire Wheels are the highest acme of mechanical perfection—the peer of them all.

Their triple laced spokes insure maximum resiliency and an additional 25% tire mileage. Wheels can be interchanged conveniently and quickly by merely unscrewing and replacing the hub cap.

In addition, such features as strength, endurance, durability and lightness make them more than worth the cost.

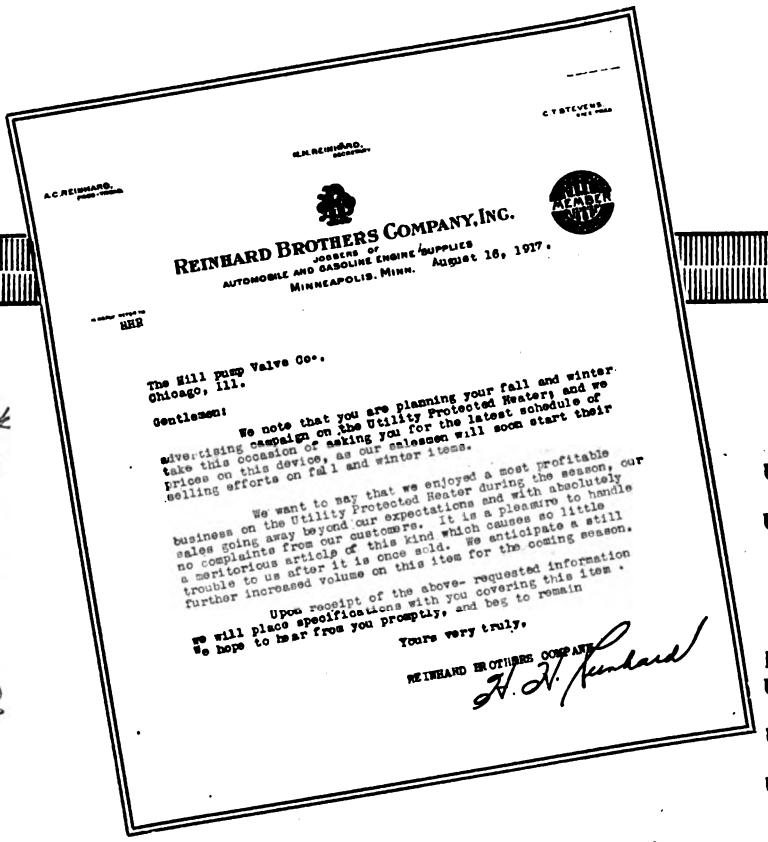
DEALERS AND JOBBERS:

Quick turnovers, more profits and satisfied customers are some of the advantages offered by Dayton Wire Wheels. Write to-day. DELIVERIES NOW.

THE DAYTON WIRE WHEEL CO. **826 Miami Road, Dayton, Ohio**

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"We Enjoyed A Most Profitable Business on the UTILITY Protected Heater"



REINHARD BROTHERS COMPANY, INC.
JOBBERS OF AUTOMOBILE AND GASOLINE ENGINE SUPPLIES
MINNEAPOLIS, MINN. August 16, 1917.

The Hill Pump Valve Co.,
Chicago, Ill.

Gentlemen:

We note that you are planning your fall and winter advertising campaign on the Utility Protected Heater, and we take this occasion of asking you for the latest schedule of prices on this device, as our salesmen will soon start their selling efforts on fall and winter items.

We want to say that we enjoyed a most profitable business on the Utility Protected Heater during the season, our sales going away beyond our expectations and with absolutely no complaints from our customers. It is a pleasure to handle a meritorious article of this kind which causes so little trouble to us after it is once sold. We anticipate a still further increased volume on this item for the coming season.

Upon receipt of the above- requested information we will place specifications with you covering this item. We hope to hear from you promptly, and beg to remain

Yours very truly,

REINHARD BROTHERS COMPANY

H. N. Reinhard



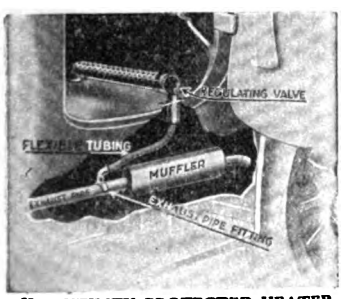
Price $15

UTILITY Jr. Protected Heater for Fords...	$7.50
UTILITY Front Seat Heater for Maxwells, Chevrolets, Fords and Front Seat Installation in all other cars	$10.00
Prices west of Rockies:	
UTILITY Protected Heater	$16.00
UTILITY Front Seat Heater	$10.75
UTILITY Jr. Heater..	$8.00

Keep the Driver Warm

Every Jobber and Dealer Can Do The Same With

UTILITY Protected Foot Rail HEATER



How UTILITY PROTECTED HEATER Is Attached to the Exhaust

The one thing that sells best in winter, to cold motorists, is **heat.**

That's why jobbers and manufacturers write us letters like the above—why **you** should be writing them to us for profits.

UTILITY Protected Heaters are the most logical winter sellers—**and they sell.**

Write for complete details, and for unusually attractive literature for yourself and your own UTILITY prospects.

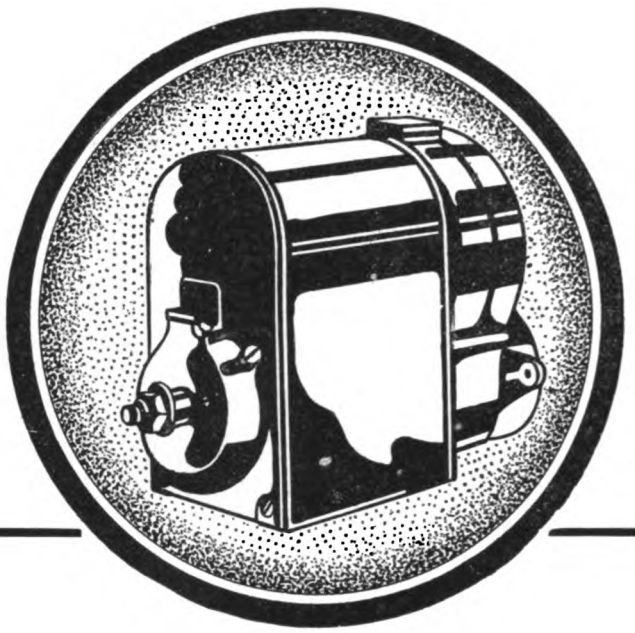
Front Seat Installation Keeps The Driver Warm

The Hill Pump Valve Company

Archer Ave. and Canal Street, Chicago

Eastern Sales Office—149 Church Street New York City

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Consider the Source of Your Spark

Consider it well, for when the spark falters so does the motor.

Consider the structural excellence of your Magneto from the electrical standpoint and from the mechanical.

Is it so designed as to yield the highest possible spark efficiency?

Is it so designed and are the materials so selected that you need not fear its failure because of the shocks and jars of hard service?

How thoroughly is it protected from the harmful effects of dust, water and oil?

How accessible are the parts that require occasional adjusting?

The more searchingly you apply these questions to the Eisemann Magneto, the more certain you will be to agree with the leading manufacturers of trucks, tractors and pleasure cars who have adopted Eisemann as standard equipment. In all, there are 117 of them.

THE EISEMANN MAGNETO CO.

Sales and General Offices: 32-33d St., Brooklyn, N. Y.

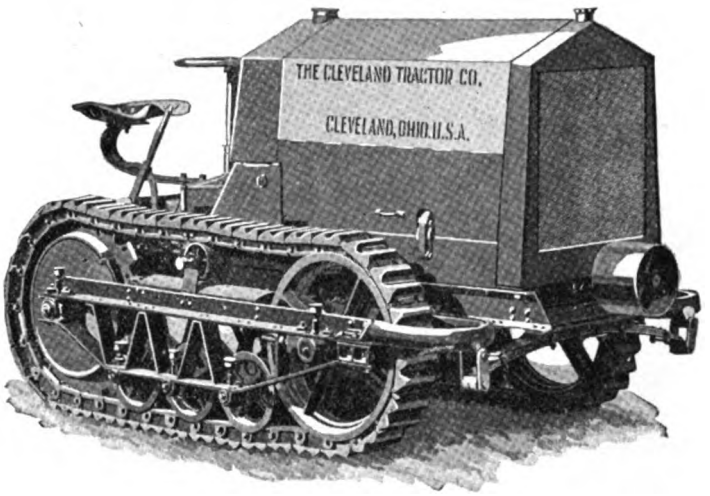
Chicago, Ill., 910 So. Michigan Avenue

Detroit, Mich., 802 Woodward Avenue

EISEMANN MAGNETO

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$1185
F. O. B. FACTORY



$1185
F. O. B. FACTORY

Cleveland Tractor
Geared to the Ground



It will pull two 14-inch plows 3½ to 4 miles an hour. It is the first tractor built to put real speed into plowing.



Hauling a transfer buggy loaded with Peerless truck frames. Weight of frames 4,00 lbs. Weight of buggy 3890 lbs.

A Wonderful Chance for Auto Dealers

Here's the point,

—if you are an established motor car dealer, *you can add the big selling Cleveland Tractor to your line with practically no increase to your overhead.*

You already have your salesroom and service station. All you need now is the Cleveland Tractor and someone to take charge of sales.

One Cleveland dealer writes—*"I have sold 51 and haven't even taken off my coat."* And he has been at it just three months.

The Cleveland Tractor is a tremendous seller. We have just finished doubling our plant. Now we are starting to redouble it. The demand is swamping us. And we want some more good substantial dealers to help us handle it.

The Cleveland Tractor is primarily a farm implement. In addition to its crawler type construction it has many exclusive features that make it just exactly the quick-selling, money-making proposition sought by thousands of small town dealers.

But it has a ready sale in cities, too. Factory owners in all sections of the country are finding it invaluable as time-saving, labor-saving, money-making equipment. It can be used either within the factory buildings or in the yards.

Contractors—road builders—mine owners—lumber men—men in a wide variety of lines are using the Cleveland with great profit. For the Cleveland is remarkably economical. And it has innumerable uses—unlimited sales possibilities.

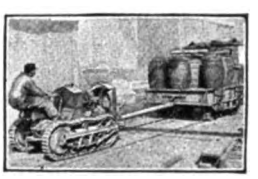
It crawls on its own tracks—just like the tanks abroad. So it can go anywhere—across ditches and gullies, through wet sand, loose clay or swampy soil—just as easily as it goes over a hardwood factory floor.

It can do more work at less cost than any other tractor on the market. Rollin H. White, the famous motor truck engineer and builder is the inventor of the Cleveland. He uses only the best materials. All gears are identical with those in the finest trucks.

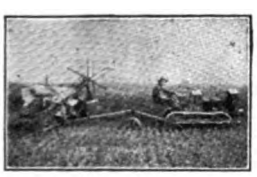
Glance over the following specifications—picture the great need for just such a machine—then write to us for full details both on the Cleveland Tractor and our dealer proposition.



It turns in a 12-foot circle and is so built as to steer by the power of its engine. It is as easy to drive as an automobile.



Hauling reverse direction on steel floor plates. Gross load 20,220 lbs. Started from dead stop without assistance or slippage.



The speed of the Cleveland can be applied not only to plowing but to harrowing, harvesting, hauling, manure spreader, seeder—or to any hauling job.



Hauling 8-foot blade road scraper. Ideal for road repair work, as it does not injure the surface over which it passes.

12 H. P. at bar	52 inches high—50 inches wide
20 H. P. at pulley	4-cylinder motor—high speed, heavy duty
600 sq. in. traction surface	Drawbar pull of 1500 lbs.
2750 lbs. weight	

CLEVELAND TRACTOR CO.
Cleveland, Ohio

Now is the time to tie up with us. Our dealers everywhere are experiencing wonderful growth. Wire or write to-day. Address Dept. B-T or use the coupon.

CLEVELAND TRACTOR CO.
Dept. B-T, Cleveland, Ohio

Please send me full information about your dealer proposition.

Name_____

City_____

County_____ State_____

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This All-Feature Car Delights Dealers

HITHERTO cars of the finer class have won their fame from one or two outstanding features. All else was secondary.

The New Case Six is a unit of features. All the major attractions have been combined in one car.

This is a selling feature that will appeal to the knowing ones.

Some buy for beauty—the Case Six has it. Some want fuel economy—the Case Six has it. Some want speed—60 miles an hour is easy for the Case Six. Some want roominess and comfort—The Case Six has both.

And so it goes. All the features of the many are absorbed into this latter-day car.

Opposite is shown a page advertisement, reduced in size, which appeared in The Saturday Evening Post on September 29. Like advertisements will also appear in Collier's and The Literary Digest.

The public is not slow to recognize and want a car like this. Case dealers will enjoy a profitable season.

In several localities there are opportunities for keen business men to obtain this New Case Six for their patrons.

Perhaps *you*.

If you will write us, we will go into the proposition with you.

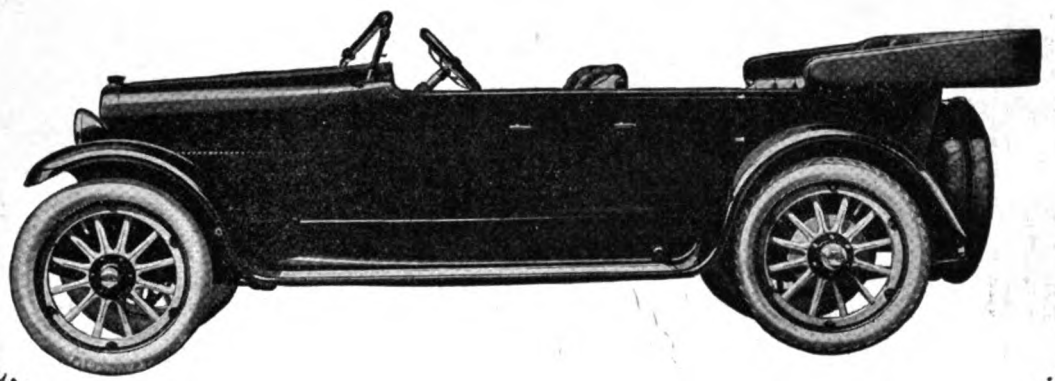
The FAMILY model—for 7 or 5 people—color, Dark Blue. The FOUR DOOR SPORT model—for 4 people—color, Periscope Green. The ALL SEASONS model—Springfield Type—color ***Dark Blue***

CASE

THE J. I. CASE T. M. COMPANY, Inc. (*Founded 1842*), 167 LIBERTY STREET, RACINE, WIS.

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CASE SIX



The Car *You'd* Build Is This New Case Six

WERE you an automobile engineer, you'd combine in one car the excellencies of the many. You would pick and choose.

That is what Case engineers and designers have done in building the new 1918 Case Six, their latest and best model. They have searched all Motordom for those proven features which meet the exacting demands of Case standards. The picture above gives an idea of the beauty of the car. The specifications below itemize its superiority.

Note how we have selected only the best to build into this car. Such an array is seldom seen in a single car. All are specially made to meet Case design and construction. For 76 years Case has stood foremost in the mechanical world. Now twenty-four great companies unite with Case, contributing their experience and master products to this Case Six.

Were you building a car, you would want the fuel economy of the Case Six. You'd want its speed and beauty, its roominess and comfort, its many refinements. You'd want its responsive "pickup" and dependability.

And for all of this, you would have to pay much more than we ask. Only a great institution like this can build and distribute with a minimum profit.

No wordiness is needed to win appreciation for this Case Six. To know its features is convincing. To see it and ride in it is conclusive. An illustrated folder will be sent upon request, including directions as to where you may inspect the new Case Six.

Compare—Then You Will Be Convinced

MOTOR—Case Continental-Six—3½"x5¼" Cylinders in block.
ELECTRICAL EQUIPMENT—Westinghouse, Separate Units. Starting Motor and Generator of abundant capacity. Willard 90-hour Storage Battery.
SWITCH—Combination—for Ignition and Lighting on Steering Column—Key locked.
WIRING—Protected by flexible conduit throughout.
CARBURETOR—Rayfield—Special.
FUEL FEED—Stewart Vacuum System—18 gal. tank in rear—Porcelain Dial Gas Gauge.
RADIATOR—Special Case made—Pump Circulation.
CLUTCH—Borg & Beck, with 10" Single Adjustable dry disc.
TRANSMISSION—Grant Lees with S. K. F. double row bearings.—Nickel Steel Gears and Shafts.—Controls are convenient for your right hand.
AXLE—FRONT—Columbia—two Bock bearings in each wheel. Ball Bearing Chrome Nickel Steering Knuckles.
AXLE—REAR—Columbia—¾ Floating—Ratio 4 5-11 to 1. Bock bearings throughout, two each in wheels, differential; and pinion shafts. Helical Gears and Pinion shaft are nickel steel—Drive shafts are 1⅜" Diam. Chrome Vanadium.
FRAME—6" channel extra deep section—Specially designed for Full Hotchkiss Drive.
BRAKES—Extra large Drums, 15"x2"—Service—External. Emergency—Internal.
UNIVERSAL JOINTS—Two—dust proof, with tubular propeller shaft.
SPRINGS—Semi-Elliptic, long and wide—Front 2"x40", Rear 2½" x 56½"—Alloy main plates with rebound top plates—anti-squeak bronze bushings in all spring eyes.
STEERING GEAR—Jacox. Easy action—with 18" corrugated wheel.
WHEELBASE—125".
WEIGHT—Under 3,200 pounds.
TIRES—35"x4½" Goodyear. SAE Carrying Capacity 4,400 pounds.
RIMS—Stanweld.
SPEEDOMETER—Stewart-Warner driven from Transmission—Drive Gears enclosed.
POWER TIRE PUMP—Kellogg—located on Transmission—Drive gears enclosed.
HORN—Klaxon.
BODY—Of superior quality—splendidly designed and comfortably proportioned. Mahogany panelling in cowl board and in rear of front seats. The dash and two tonneau lights are conveniently arranged. The Extra Seats disappear in the backs of the divided front seats, and are dust proof.
CUSHION SPRINGS—Cushion and back construction are Marshall type—soft, deep and upholstered over china cotton with genuine leather. The details of body finish are most carefully worked out.
WINDSHIELD—Set at a conservative rake—folding type—Ventilating, rain vision.
TOP—Courtland one man type. The deck is of double texture material. Whipcord lined. The curtains fold into the deck or open with the doors.
HEADLIGHTS—Double Bulb and vertically adjustable to eliminate glare.
TIRE CARRIERS—Provide for one or two spare tires or one wire wheel.

THE J. I. CASE T. M. COMPANY, Inc. (*Founded 1842*), 167 LIBERTY STREET, RACINE, WIS.

CASE

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GURNEY
BALL BEARINGS



About Area Contact

When a ball rolls under a load, the carrying capacity is dependent upon the area of contact between ball and surface on which it rolls.

If the ball is placed on a flat surface, the area of contact is very small. When the ball rolls on an accurately ground raceway with a contour slightly larger than the ball itself, the area is greatly increased.

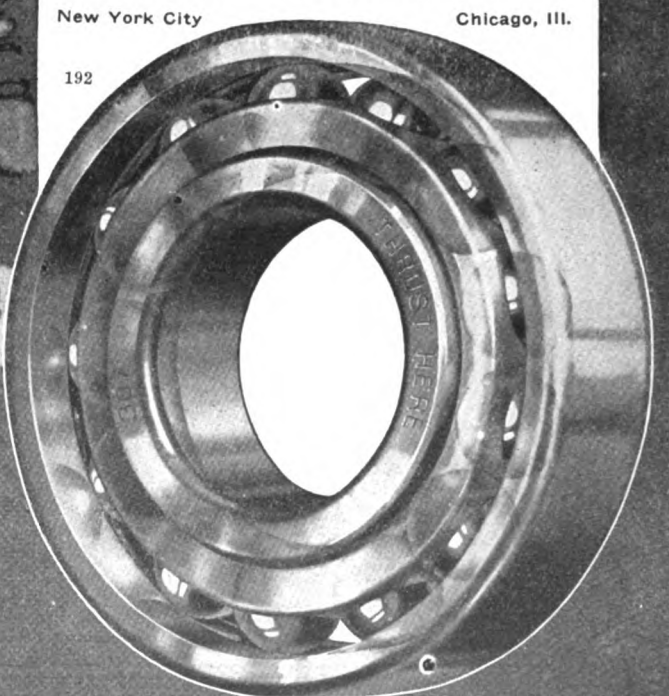
For the reason that GURNEY BALL BEARINGS have a raceway of close and accurate contour, one ball will carry twenty-six times the load as the same ball if rolling on a flat surface.

Besides the design of GURNEY BALL BEARINGS allows ***more*** balls and ***larger*** balls.

We will be glad to explain further. Write for data.

Gurney Ball-Bearing Co.
Conrad Patent Licensee
Jamestown, N. Y.

New York City Chicago, Ill.



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ONE MILL—1830

FROM ONE MILL TO THIRTY-FIVE

Pioneers

in the manufacture of cotton machine belting in America

"The First RUSCO Product"

1830 to 1917

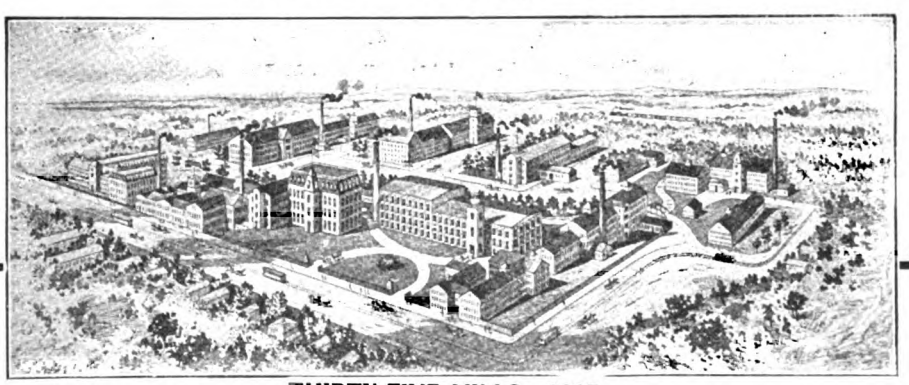
Pioneers

in the manufacture of asbestos brake lining, cone clutch facing, clutch discs, made on machines designed and built by ourselves.

The demand for "RUSCO" products has more than doubled each year for the past ten years.

THE RUSSELL MANUFACTURING CO.

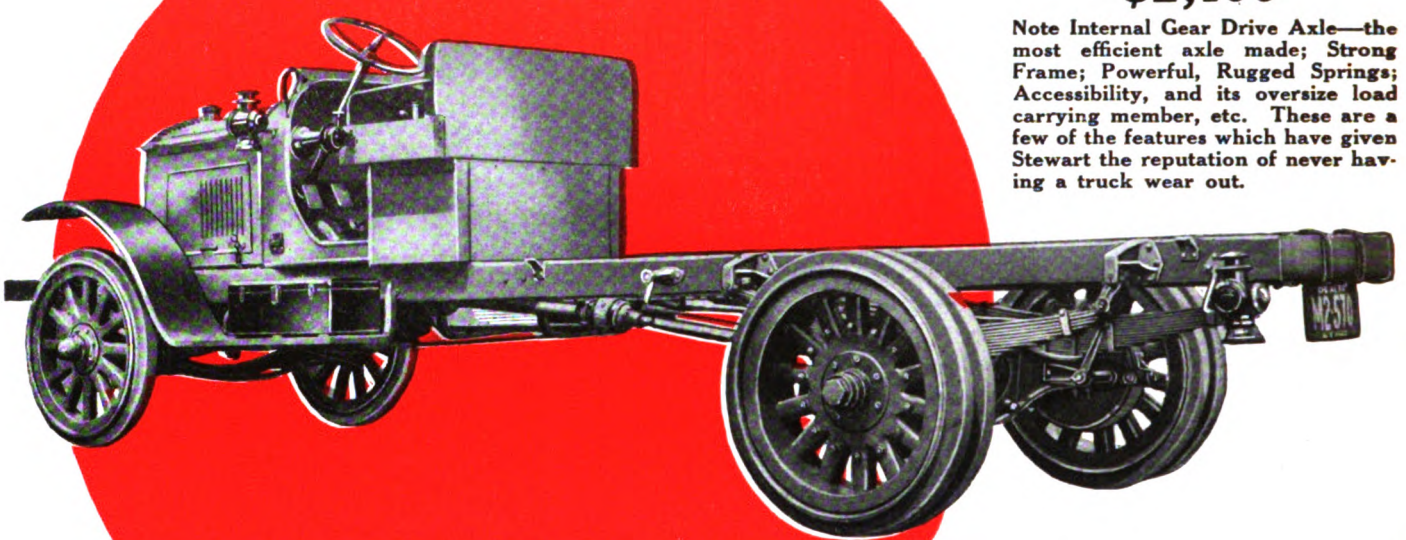
MIDDLETOWN, CONN.



THIRTY-FIVE MILLS—1917

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A Big Year for



Model 7, 2-Ton Capacity

$2,100

Note Internal Gear Drive Axle—the most efficient axle made; Strong Frame; Powerful, Rugged Springs; Accessibility, and its oversize load carrying member, etc. These are a few of the features which have given Stewart the reputation of never having a truck wear out.

"The proof of the Pudding is in the Eating" and Stewart Dealers are going to divide a pretty big pudding this year.

Not only that, but they have a still bigger one coming next year.

The reasons are not hard to find. They lie in the actual record that the Stewart Truck has made.

Possessing all the good points that an ideal truck should have, the STEWART has always been an easy truck to sell. The unquestioned quality and easily apparent advantages of its mechanical units; the good looks of its staunchly built, splendidly finished bodies; its complete modern equipment—all these give the salesman strong, convincing points to talk about.

But the actual record, the performance in service, the super satisfaction that the truck itself has actually given, is getting behind our dealers in the shape of innumerable friends and well-wishers of the STEWART TRUCK, among business men, in a manner that is building up sales like compound interest.

If you are a good, dependable dealer, who knows how to appreciate a good generous contract and can hold up his end in a hustling, live-wire crowd, it would be a good thing for you to write us right now!

We have some good openings left for new dealers, and can show you prospects for the coming year that we don't believe you can beat.

Think it over after getting our reply. Don't fail to write us first. You can't consider a thing till you know all about it, and we couldn't put all we have to tell you in twenty ads like this.

QUALITY TRUCKS Stewart QUANTITY PRICES

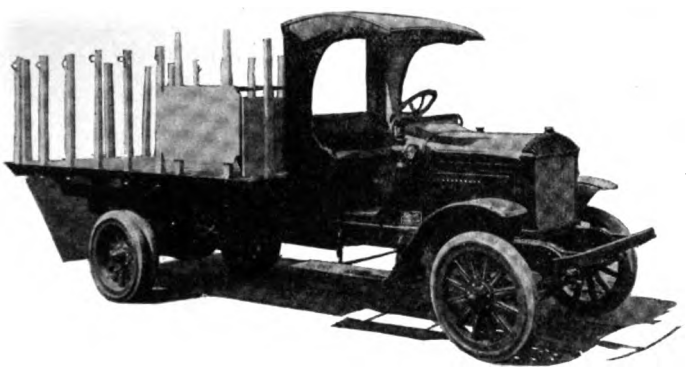
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Stewart Dealers

For several years STEWART TRUCKS have been making remarkable records for reliability and economy.

They are simple to operate, easy to care for, hard to hurt. Every unit of their make-up is well known, thoroughly established, of the highest possible character and reputation.

The STEWART TRUCK has the most efficient type of rear axle made—the Celfor Internal-Gear, with its powerful driving power free from all load stress, and its strong load-carrying axle. The long, sinewy springs carry the load and superstructure, leaving a minimum amount of unsprung weight.



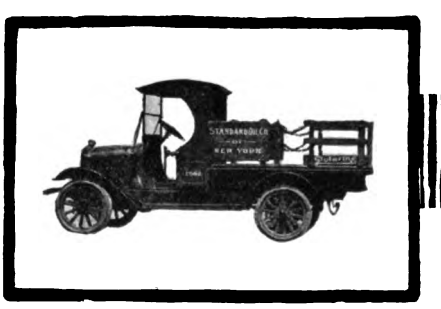
The new Model 7, 2-Ton STEWART has a wheelbase of 156 inches, and a loading space suitable for 10, 11 or 12-foot bodies. It has all the high quality units of other STEWART models, and is equipped with Bound Brook Oil-less Bushings at certain points in the springs, spring shackles, and brake countershafts. These bushings are "neglect proof" and run perfectly without lubrication, giving the truck a longer life of efficient service, with less care on the driver's part.

Write for full specifications and particulars concerning the Stewart Dealer Proposition

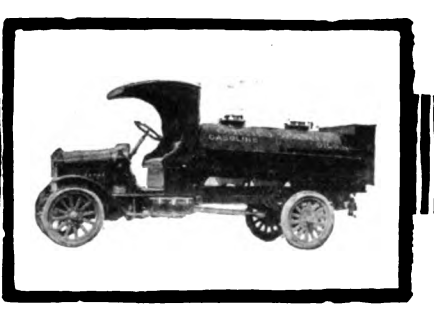
Stewart Motor Corporation
Buffalo, N. Y.



Model 6—¾-Ton Chassis $845



Model 3—One-Ton Chassis $1390



Model 4—1½-Ton Chassis $1585

Stewart TRUCKS

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Garford MOTOR TRUCKS

Are You Building *Your* Future on a Permanent Truck?

Are you building the foundations of *your* future business on shifting sands—on trucks of no fixed value?

Or are you digging down deep to bed rock and building for all time—on a *permanent* truck?

This is a question worthy of your best thought. It is a question that vitally affects your future.

Fly-by-night concerns—uncertain values—trucks of mushroom growth may flourish now in these prosperous days. They may be profitable for the moment.

But the *real* motor truck merchant looks further than today. He builds his trade on an established truck—a truck with a past—and *a future.*

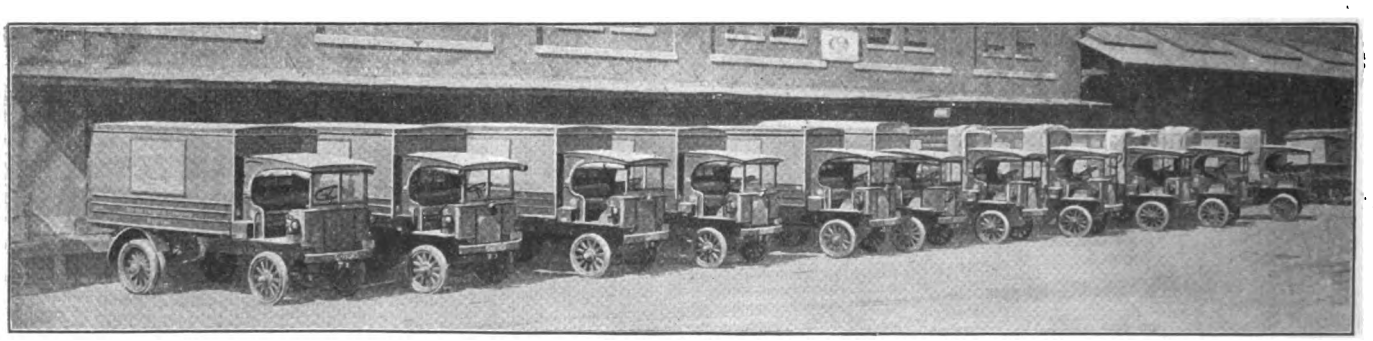
There are such trucks. Among them is the Garford.

Garford dealers are the future-building kind—dealers who prefer to sell trucks that stay sold and sell others—dealers who cherish the type of trade built up by the Garford—dealers who are looking forward to tomorrow.

If you think you are the Garford type of man write us,—Dept. 104.

The Garford Motor Truck Company, Lima, Ohio

Manufacturers of Motor Trucks of 1, 1½, 2, 3½, 5 and 6 ton capacity
4½, 7 and 10 ton Tractors
The Garford Road Builder
Distributors and Service Stations in all Large Cities



When writing advertisers please mention Motor World—It identifies you

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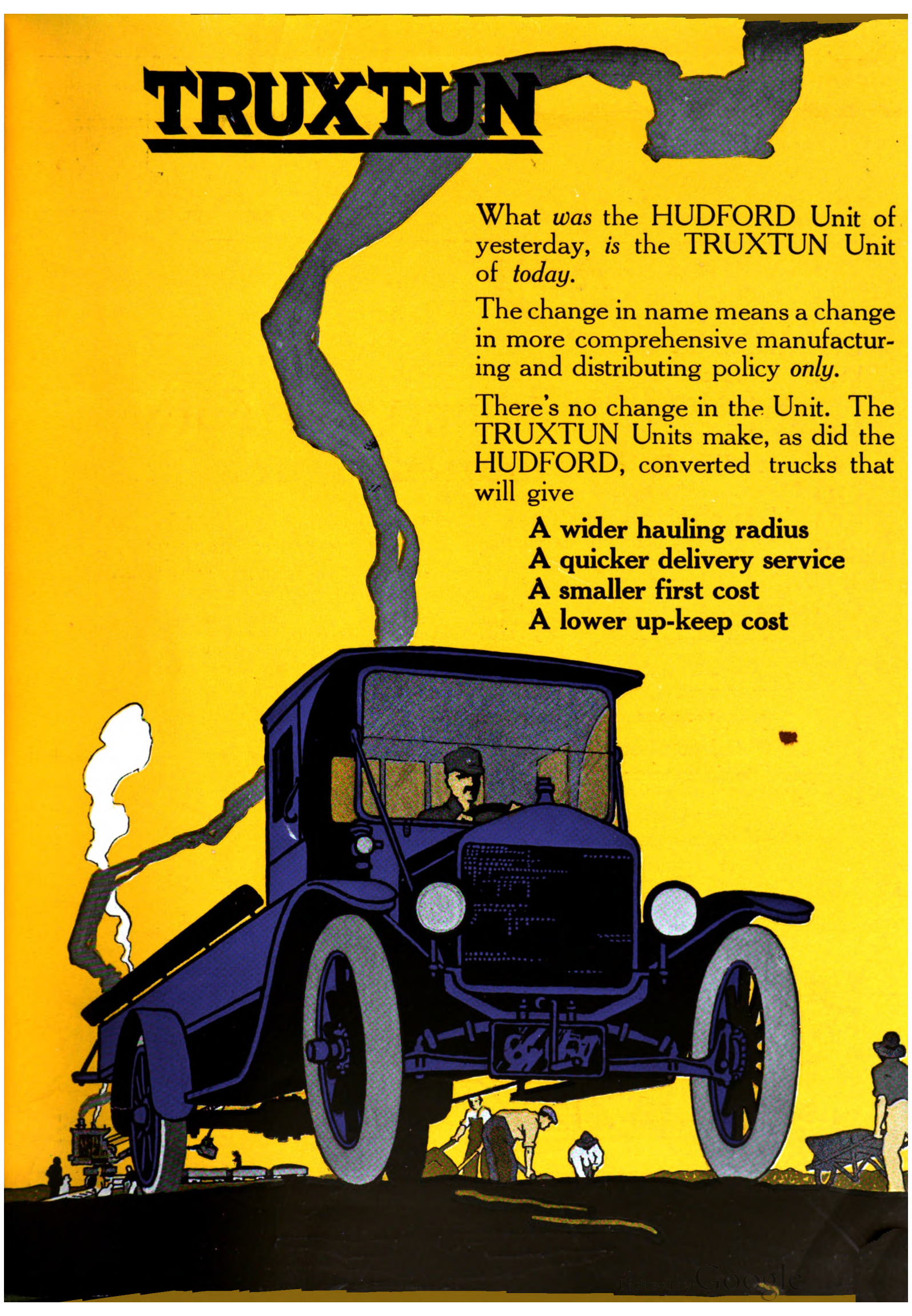
TRUXTUN

What *was* the HUDFORD Unit of yesterday, *is* the TRUXTUN Unit of *today*.

The change in name means a change in more comprehensive manufacturing and distributing policy *only*.

There's no change in the Unit. The TRUXTUN Units make, as did the HUDFORD, converted trucks that will give

A wider hauling radius
A quicker delivery service
A smaller first cost
A lower up-keep cost



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TRUXTUN

INTERNAL GEAR-SHAFT DRIVE—

let the significance sink in—an internal gear-shaft drive unit that conforms to the manufacturing practice of the standard trucks.

It'll convert a *Ford* or other make of pleasure car into a 1¼-ton or 2-ton truck that'll solve the hauling problems of big manufacturers and small dealer in surprisingly economical manner.

TRUXTUN Units are made to stand up under the hardest wear. There's nothing delicate or dainty in their construction. They're of rugged design—made out of the best material—and they're built to DELIVER THE GOODS.

A solid forged nickel-steel axle to carry the load is a typical detail of their construction and the principle is incorporated in the best of locomotives.

Study the Unit in detail and you'll know why leading houses of the country are purchasing TRUXTUN Units to deliver THEIR goods.

TRUXTUN UNITS

(formerly Hudford Units)

Model A

Makes any FORD into a 1¼-ton Truck; standard wheelbase length, 112″ or 124″ . . **$390**

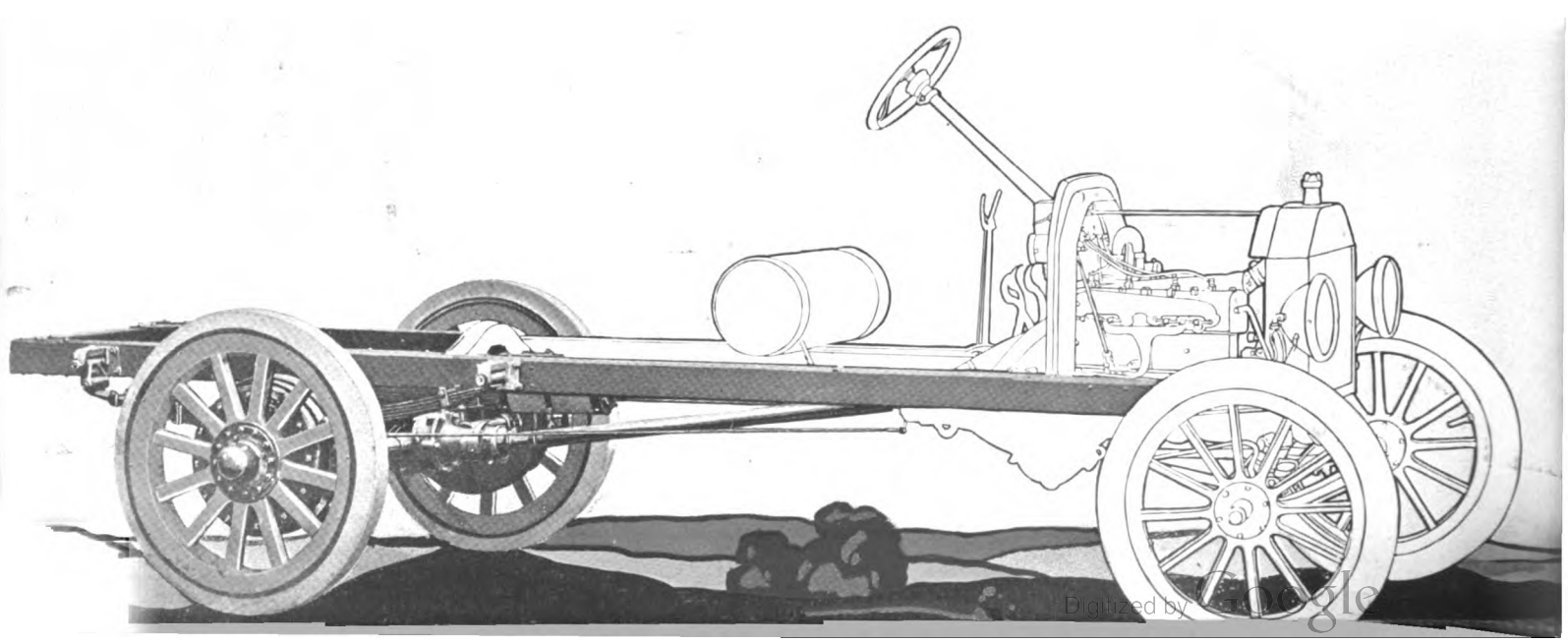
Special wheelbase, 136″ **$410**

Model B

Makes any FORD into a 2-ton Truck; standard wheelbase length, 126″ **$490**

Special wheelbase, 138″ **$510**

Prices f. o. b. Philadelphia and Detroit



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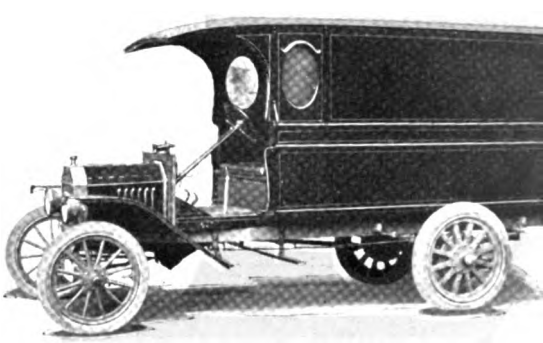


Four Stock Bodies



Appearances count heavily today, and really there's nothing in truck construction with a more striking appearance than trucks that have been converted by TRUXTUN Units and standard stock bodies.

The utility feature is there without a doubt—a tried motor, a reinforced chassis construction that spells strength and durability, a body suited to the work for which it is intended, all forms an attractive combination that counts heavily in actual appearance.



Stock bodies are carried in quantities at strategic points for the saving of freight and the convenience of TRUXTUN dealers and users. Cabin, stake, panel and tank bodies—they lend themselves to a wide variety of hauling purposes, but special bodies are made to meet special requirements.

Your local body builder may have some splendid ideas for a unique style of body to suit most unusual circumstances, but our equipment and facilities for stock bodies cannot be beaten on price or delivery.

TRUXTUN UNITS

(formerly Hudford Units)

Model A

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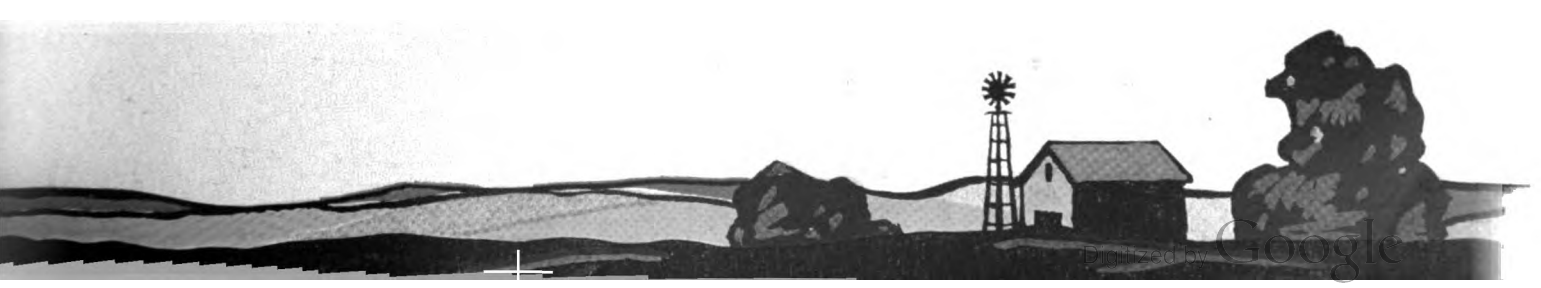
Special wheelbase, 136″ **$410**

Model B

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Special wheelbase, 138″ **$510**

Prices f. o. b. Philadelphia and Detroit



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TRUXTUN

Dealers could not wish for a better proposition to handle than the TRUXTUN Units.

TRUXTUN Units are in demand—manufacturers and big wholesale and retail houses are ordering them in single units and in fleets.

Single units are going out in carload lots all over the country—the small man is realizing that his deliveries can be made more economically with TRUXTUNS than with any other form of converted or standard truck. If there's no dealer under contract in YOUR territory taking advantage of the splendid opportunity for present and future business, WRITE US TODAY.

Our proposition is a good one.

COMMERCIAL CAR UNIT CO.

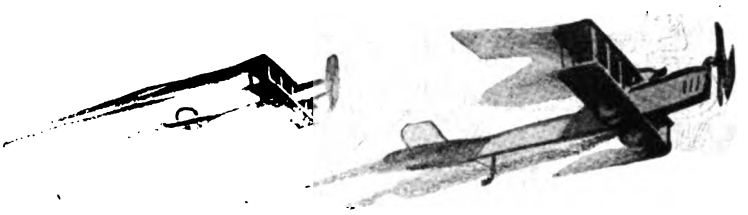
Successors to the HUDFORD COMPANY

16th STREET AND GLENWOOD AVENUE

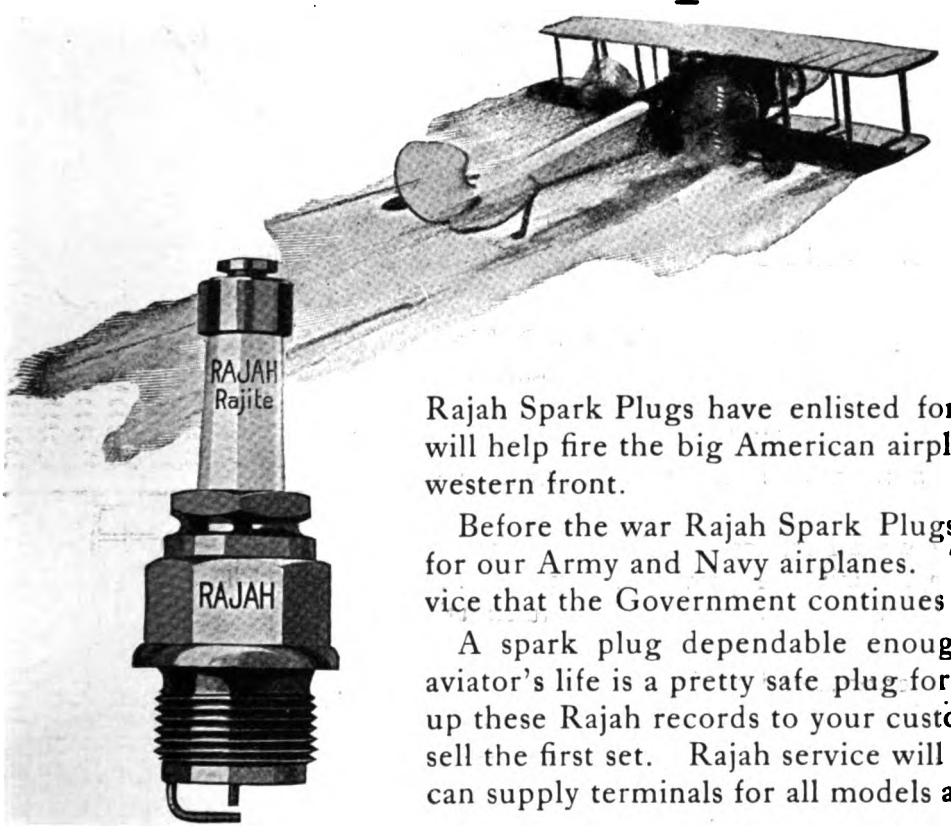
PHILADELPHIA, PA., U. S. A.



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Rajah enlists in the U. S. airplane service



Rajah Spark Plugs have enlisted for service in France. They will help fire the big American airplane fleet to victory on the western front.

Before the war Rajah Spark Plugs were standard equipment for our Army and Navy airplanes. They made so good in service that the Government continues their use.

A spark plug dependable enough to safeguard a fighting aviator's life is a pretty safe plug for a car owner to use. Talk up these Rajah records to your customers. It makes it easy to sell the first set. Rajah service will sell the rest. Your jobber can supply terminals for all models and all makes of motor car.

RAJAH *SPARK PLUGS*

RAJAH TERMINALS AND ADAPTERS

are furnished so that Rajah Plugs can be used on any car not equipped with the Rajah type of Clip Terminal. Any size exchanged if desired



Rajah Regular Clip Terminal
Adjustable to any cable. With the extra collar supplied fits any make of plug.



Rajah Thumb Nut Terminal
Adapter for Dodge, Ford, Hup, Hudson, Maxwell, Mitchell, Packard Twin Six, Pullman.



Rajah Ferrule Clip Terminal
With any size ferrule required. Fits any make of plug with the extra collar supplied.



Rajah Packard Terminal
Adapter for Packard 4 and 6 cylinder.



Rajah Stud Terminal
Adapter for Buick, Chevrolet, Oldsmobile.



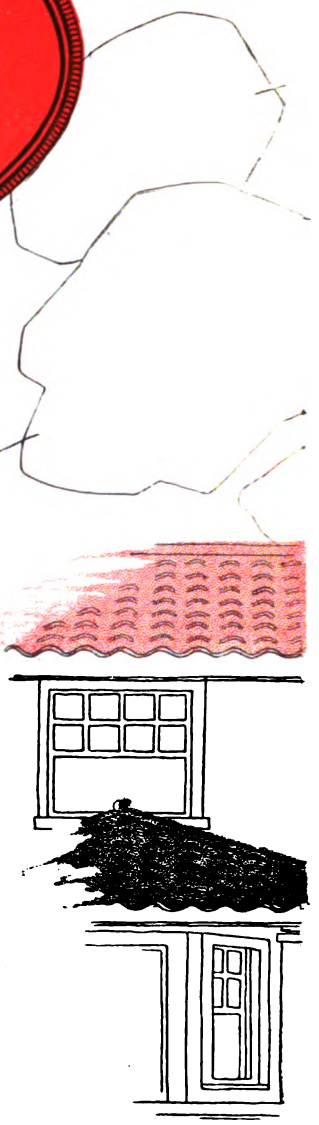
Rajah Ball Terminal
Adapter for Franklin.
Special type for Willys-Knight.

Address RAJAH, *Bloomfield, N. J.*

HUGHSON & MERTON, Inc., San Francisco, Los Angeles, Portland, Seattle JOHN MILLEN & SON, Ltd., Montreal, Toronto

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The Allen Series 41



The stability of an Allen dealership

Here is the Allen new Series 41.

The Allen enters its sixth year under most favorable auspices.

Always backed by sound factory policies and by a good car, the Allen dealer can now anticipate the additional benefits of a broader campaign of national publicity.

This series is to be announced nationally in the October 20th issue of the Saturday Evening Post and in newspapers throughout the country about the same time.

The new car

This new Allen 41 is a remarkably attractive car.

The body design is unusually pleasing.

To say that the sturdy Allen motor has been improved upon will sound like a rash statement to those who know its virtues of the past. It is true, nevertheless.

Heavier crankshaft and bearings, and lighter reciprocating parts eliminate vibration even at high speeds and assure exceptional length of service.

Features like the Borg and Beck dry plate clutch, rotary switch on steering column for all electric controls, Connecticut automatic ignition, Perfex honeycomb radiator, full Hotchkiss drive, spiral cut ring gear and pinion, and other mechanical refinements are all in line with the Allen policy of continuous betterment.

The rear seat is now 46 inches across the cushions and 49 inches at the top, which, with a very commodious front compartment, constitutes a body of greater roominess than is possessed by any car of its class.

The popular options of Allen brown or rich green bodies, with cream wheels, and black fenders and radiator are continued.

$1095

for 5-passenger Touring Car or 4-passenger Roadster

$1395 for 5-passenger Sedan

Choice of rich green or Allen brown finish—touring car; Allen brown—roadster; deep blue—Sedan.

Black fenders, radiator and mud aprons with cream wheels on all models.

Prices f.o.b.

Fostoria, Ohio

Address Desk 2, Sales Department

The Allen Motor Company

Fostoria, Ohio

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Dealers wanted

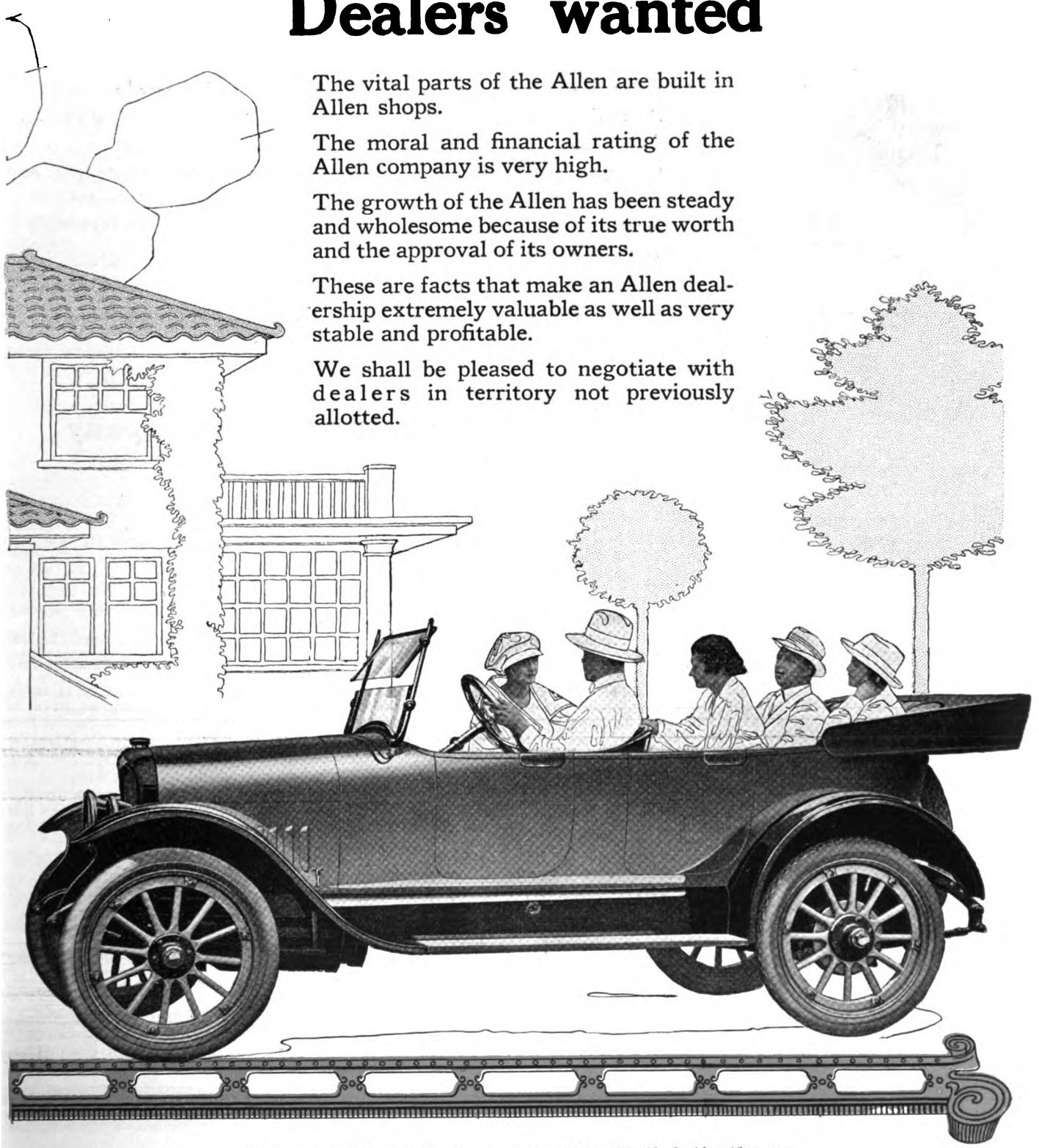
The vital parts of the Allen are built in Allen shops.

The moral and financial rating of the Allen company is very high.

The growth of the Allen has been steady and wholesome because of its true worth and the approval of its owners.

These are facts that make an Allen dealership extremely valuable as well as very stable and profitable.

We shall be pleased to negotiate with dealers in territory not previously allotted.



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Says This Business Has An Unlimited Future

Lalley-Light Distributer in Iowa Sees Pleasing Prospect in the Possibilities Ahead—Says Farmer Is Ready to Buy



The portrait is that of L. R. Kruidenier of Des Moines, Ia.

He is manager of the Kruidenier Lalley-Light Company, Lalley-Light distributer for Iowa.

He organized his company after he had investigated Lalley-Light; and after he had canvassed the field of its sales.

What he says in his letter confirms what we have told you repeatedly—

That the farmer is ready for electric light.

That Lalley-Light is the most simple, efficient and economical plant.

That the business has possibilities of growth and profit that are literally unlimited.

Kruidenier Lalley Light Company

1109 Walnut Street

Des Moines, Iowa.

August 21, 1917.

Lalley Electro-Lighting Corp.,
1821 Mt. Elliott Ave.,
Detroit, Mich.: Attention—Mr. Kennady.

Gentlemen:

I have now been in the Farm Lighting business almost two months; and during that time must necessarily have drawn some conclusions concerning that business, and particularly its possibilities for the future.

In my opinion, the farmer of to-day has reached a stage where he is ready and anxious to light his home and out-buildings with electricity and to have its use for power devices.

The automobile, with its electric cranking and lighting systems, has largely been responsible for his education along these lines, and the field for the farm lighting business in the future, in my opinion, has unlimited possibiltes.

The LALLEY Plant is coming up to all my expectations and is readily acknowledged by experts along electrical and mechanical lines, as well as by our farm users, as being the most simple, efficient and economical plant on the market.

My relations with the Lalley Electro-Lighting Corporation of Detroit, Michigan, have been the most pleasant and satisfactory I have ever experienced in business; and I feel sure that their high standing and honorable business methods will soon carry them to a foremost position in the farm lighting business.

Yours very truly,

KRUIDENIER LALLEY LIGHT CO.,
(Signed) L. R. Kruidenier, Mgr.

LALLEY-LIGHT

THE BALL-BEARING ELECTRIC LIGHT PLANT

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Turn Winter's Dull Times Into Welcome Profits

Lalley-Light Puts the Dealer in an Entirely Different And Better Position Between Fall and Spring

For scores and hundreds of automobile dealers, Lalley-Light will make this winter different from all the others they have known.

It will change the coming months from a season of dullness to a period of profit.

Dealers will be busy all winter long. They will be making money from Lalley-Light.

Selling a car now and then, as usual in winter. But doing their big business, making their big money, on this farm electric light plant.

Simple Facts Prove The Case

If this sounds too good to be true, consider the facts.

One big fact is that farmers are ready for electric light and power. You can easily confirm this for yourself by asking half a dozen farmers if it isn't so.

Another is that, this year of all years, the farmer is in position to gratify his desires. He has the money, as you all know.

The third is that Lalley-Light meets every requirement of low operating cost, safety, simplicity, long-life and efficiency.

More than seven years of actual farm use prove this beyond any doubt.

Other considerations could be brought to bear, but these are the three vital things to remember.

Go over them again. The farmer wants electricity. He has the money to buy it. Lalley-Light is the plant that's right. It is not experimental.

A Money-Maker In Winter

Now come to your own case. Winter is coming fast. To the automobile dealer, it is a season of small business and small profit—or even no business and no profit.

If cars are sold, they are sold only because efforts are doubled or trebled.

You are anxious to have the business carry itself until spring. You want to keep your organization together. That is merely good business.

Lalley-Light is the means by which you can do both—and earn profits into the bargain.

That is one reason why Lalley-Light fits in so perfectly with the motor car business.

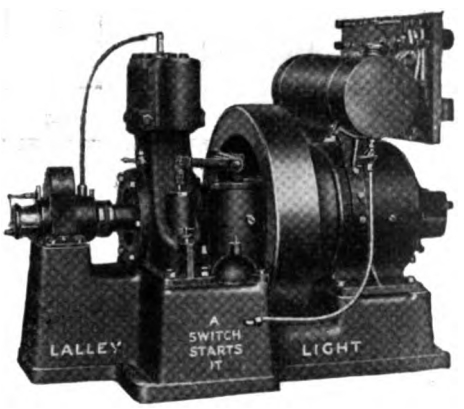
Sales Are Waiting Around The Corner

Your market is waiting for Lalley-Light, all ready-made.

It is waiting only for you to bring Lalley-Light to it.

There is no question that sales will be made. They are as good as assured beforehand. Moreover, Lalley-Light business is all new business—no trade-in deals to eat into profit.

And winter is the time to make these sales. Then the farmer is a man of leisure, comparatively speaking.



Plant is 27 inches long, 14 inches wide. 21 inches high

Evenings are long and lonely. Lalley-Light will make them cheery and bright.

It is not too late for you to get in line for this Lalley-Light winter business.

Lalley-Light dealers will make winter sales. They will make winter profits. They will have a list of fresh automobile prospects for spring.

Seize your opportunity now. Do not let it slip away, and put in another profitless winter.

Send the coupon now.

Lalley Electro-Lighting Corporation,
1826 Mt. Elliott Avenue,
Detroit, Mich.

Send at once details of your proposition as to territory, discounts, etc.....

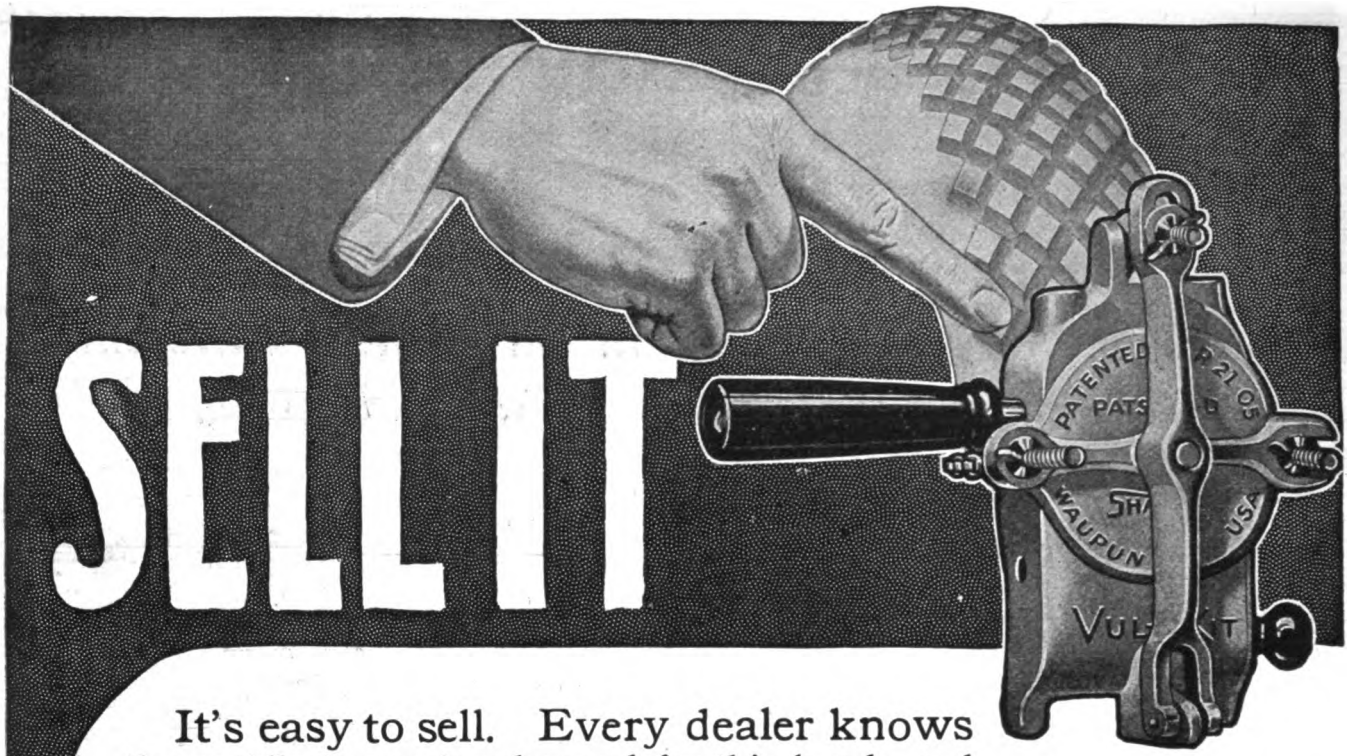
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LALLEY-LIGHT
THE BALL-BEARING ELECTRIC LIGHT PLANT

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It's easy to sell. Every dealer knows the rapidly increasing demand for this handy and inexpensive method of overcoming tire trouble. Every tire owner needs and wants one of these. No car is sold supplied with a tire saving device.

SHALER

Tire Repair Kits

For Motorists to Carry in Their Tool Boxes

Each sale gives you a liberal profit on the kit itself and besides gives you a continuous permanent profit on the sale of repair material and supplies that the motorist must buy from time to time for use on the road.

Increased tire prices increase every motorist's need for a Shaler Tire Repair Kit to reduce tire expense. Some dealer is going to make the sales. That dealer can be YOU.

The Shaler is advertised regularly throughout the season in the Saturday Evening Post and more than fifty other magazines. Motor car owners know the Shaler and call for it by name.



Write on Your Letterhead for Catalog and Dealer's Prices

Write today for complete catalog of Shaler Tire Repair Kits—Dealers' Discounts and full information about Dealer's Helps that we furnish, including Counter Stands—Posters—Wall Hangers—Window Displays—Booklets—Circulars—Signs and Window Cards.

C. A. SHALER COMPANY

439 Fourth Street, Waupun, Wisconsin

Oldest and Largest Manufacturers of a Complete Line of Vulcanizers for Motorists and Repair Shops

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Sells Quickly

An all-year-'round product
which is in constant demand

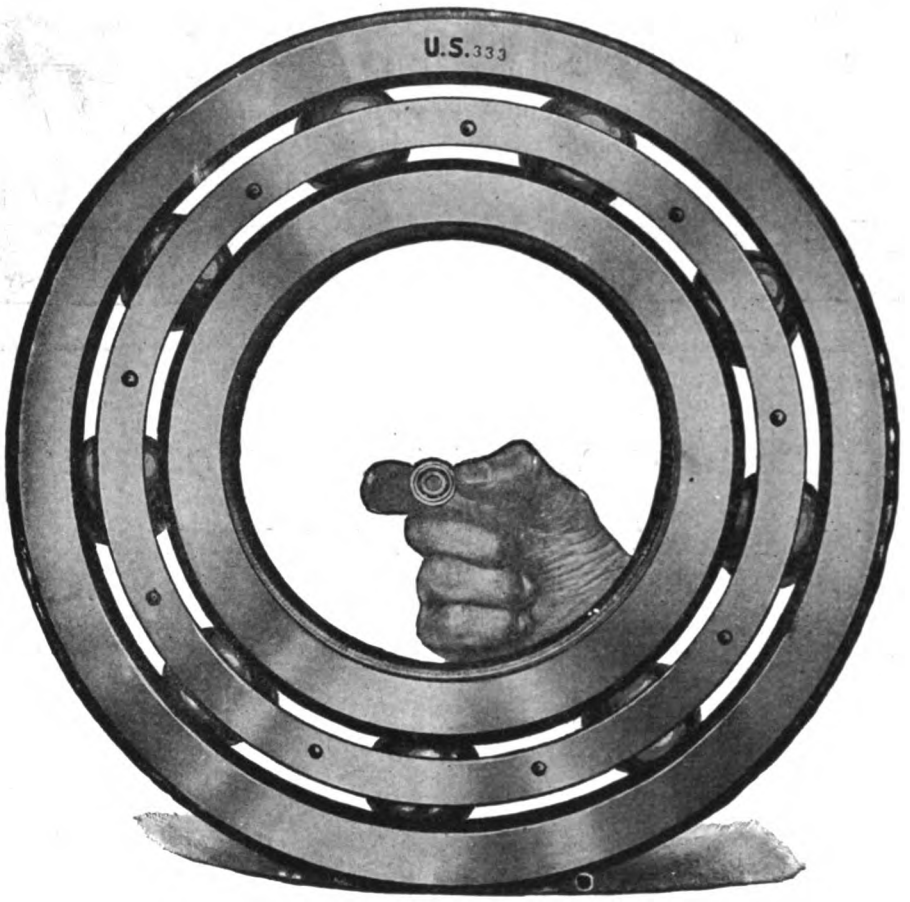
Raybestos

Brake Lining

Increase your winter profits
by relining brakes with Raybestos

Leads all others

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The Same Microscopic Accuracy In Both

FROM the minute bearing which may be held between the thumb and forefinger of one hand, all the way down the line to the massive construction

U.S. Ball Bearings

that defends machinery of giant size against friction loss and wear, every U. S. Ball Bearing measures up to the finest degree of accuracy decreed by modern engineering practice.

They are Quality Bearings throughout

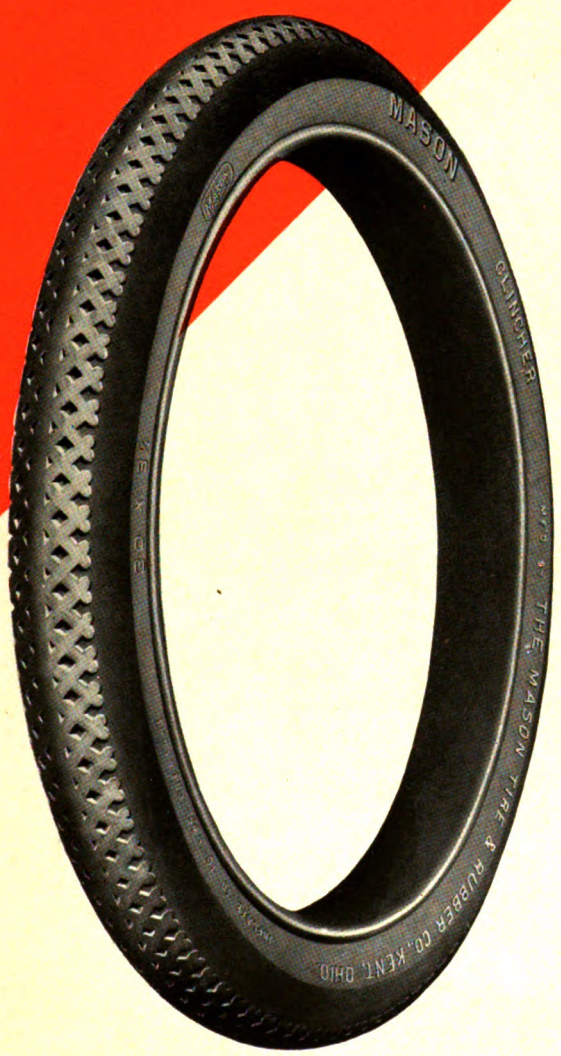
U. S. BALL BEARINGS

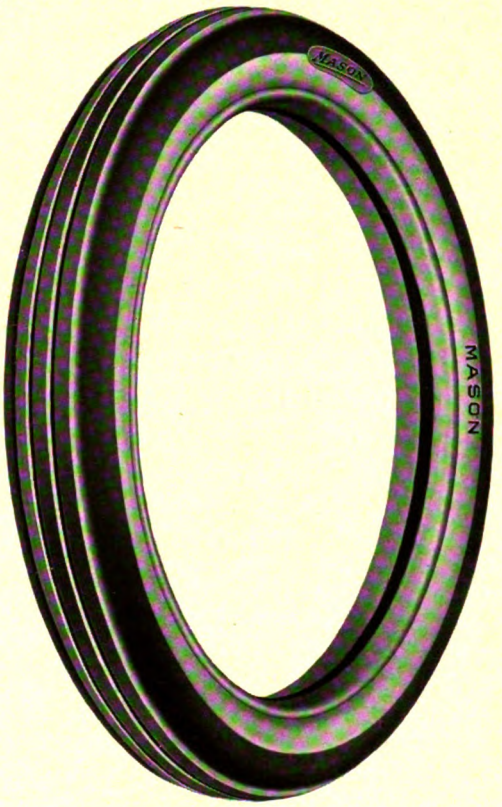
U. S. Ball Bearing Manufacturing Co.
(Conrad Patent Licensee)
Palmer St. & Kolmar Ave.
CHICAGO ILLINOIS

U. S. BALL BEARINGS

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A STATEMENT
TO TIRE DEALERS
OF THE UNITED STATES





MASON

MEANS MORE MILEAGE

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This Statement is for Every Man who is Interested in the Progressive Merchandising of Pneumatic Tires

SOMETHING more than a year ago Mason Tires first appeared on the tire market, offered on the basis of perfect design and rugged quality at a popular price.

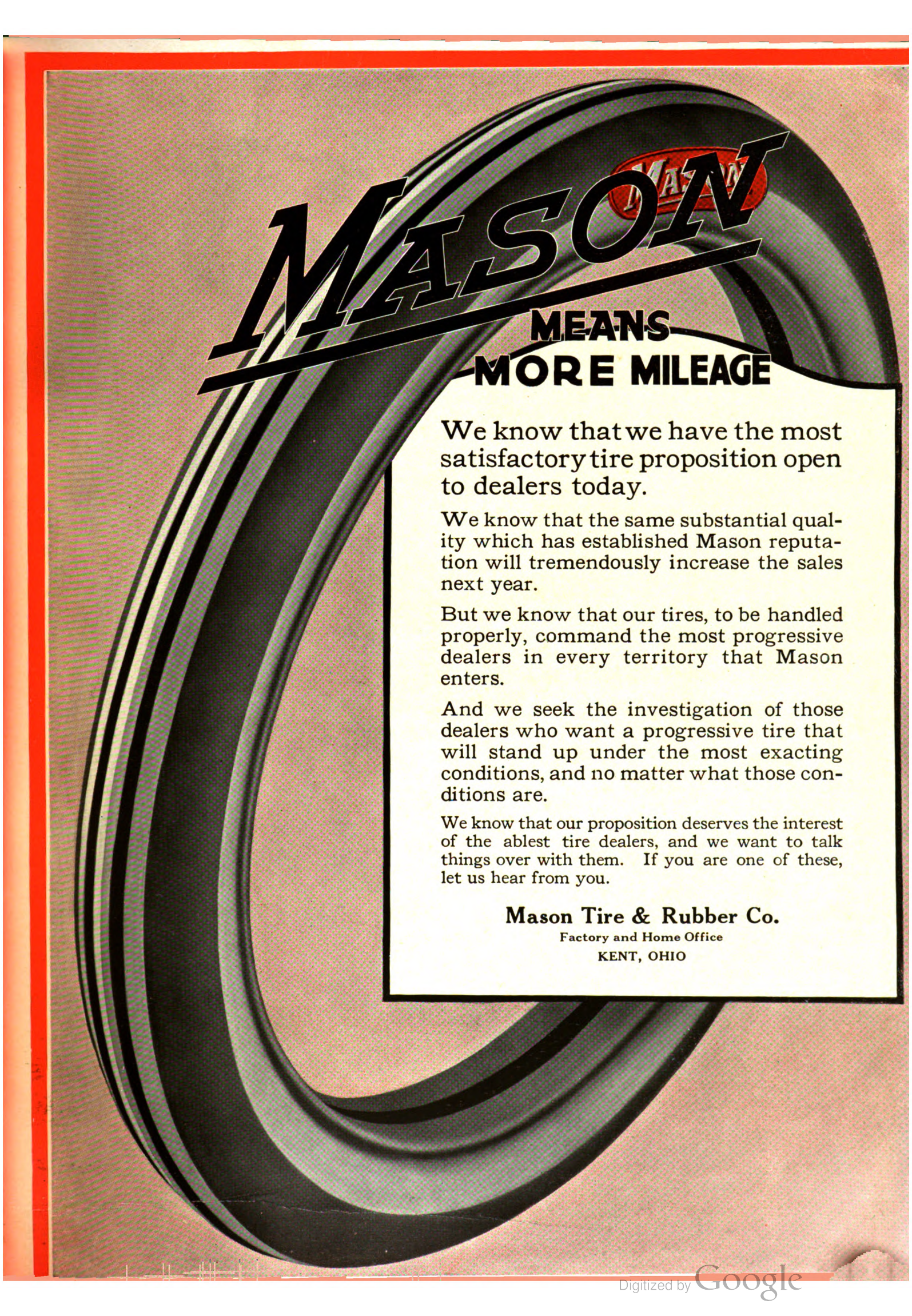
Motorists quickly recognized the worth of Mason; wherever Mason agencies have been established, Mason popularity has followed closely.

And Mason has not only meant more mileage; it has meant re-sales to satisfied users. Any Mason dealer will confirm this statement.

In one year's time Mason has leaped from obscurity and small production to a substantial reputation and an output that is taking factory space as rapidly as it can be erected.

MASON MEANS MORE MILEAGE

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We know that we have the most satisfactory tire proposition open to dealers today.

We know that the same substantial quality which has established Mason reputation will tremendously increase the sales next year.

But we know that our tires, to be handled properly, command the most progressive dealers in every territory that Mason enters.

And we seek the investigation of those dealers who want a progressive tire that will stand up under the most exacting conditions, and no matter what those conditions are.

We know that our proposition deserves the interest of the ablest tire dealers, and we want to talk things over with them. If you are one of these, let us hear from you.

Mason Tire & Rubber Co.

Factory and Home Office

KENT, OHIO

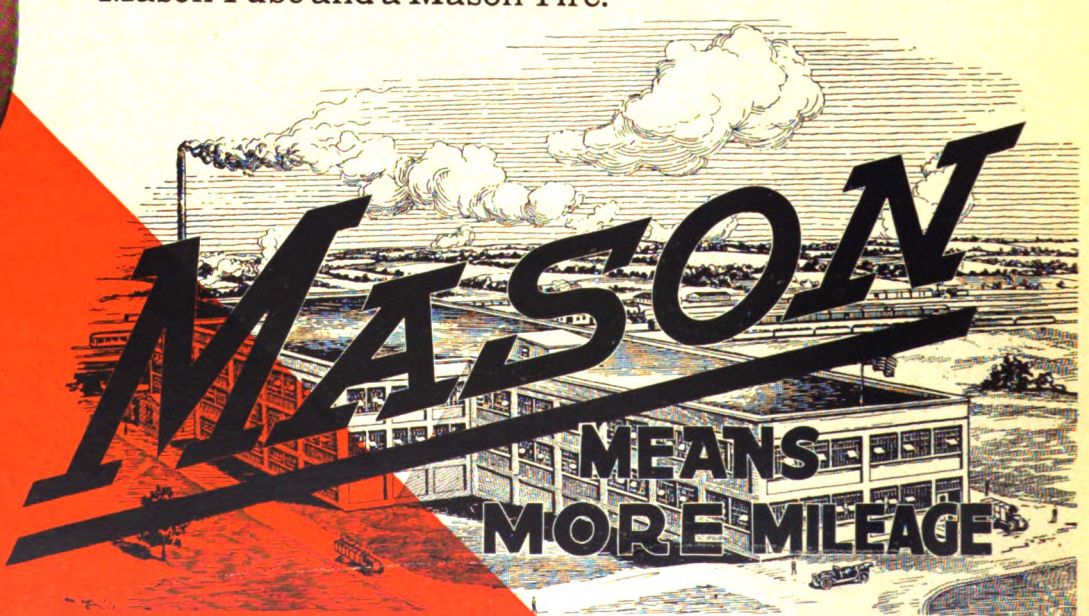
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MASON Tubes are as reliable as Mason Tires, and offer the same attractive proposition to dealers.

The same skilful craftsmanship and sturdy quality that has built the Mason Slogan is developing the tremendously wide field for the Mason Red Tubes and the Mason Grey Tubes.

The ideal tire equipment is a Mason Tube and a Mason Tire.



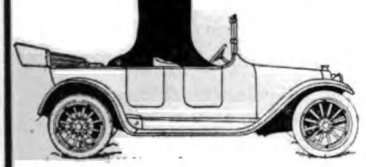
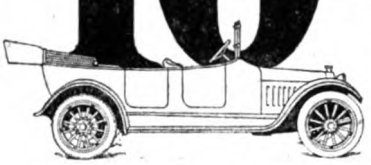
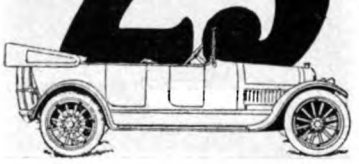
Mason Tire & Rubber Company

Factory and Home Office
KENT, OHIO (*Akron Suburb*)

Distributing Branches:
CLEVELAND: 1806 Euclid Ave.
KANSAS CITY: 1732 Grand Ave.
CHICAGO: 2120 Michigan Ave.
NEW YORK: 28 W. 63rd Street

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1 year 10 years 25 years

HOW MUCH EXPERIENCE BEHIND YOUR CAR?

Your knowledge of business tells you that few manufacturers succeed without Experience.

Yet are you taking that vital element into consideration in purchasing your new car?

It's not Chance or Luck. It's Experience that saves your tires, cuts down gasoline bills, keeps your Apperson going without repair shop bills. and makes it outlast other cars by years.

It's Experience—25 years of it, hard work and practical knowledge.

Have an Apperson demonstration and you'll understand.

Eights and Sixes, Touring Cars and "Chummy" Roadsters.

TRUE Only of the Apperson

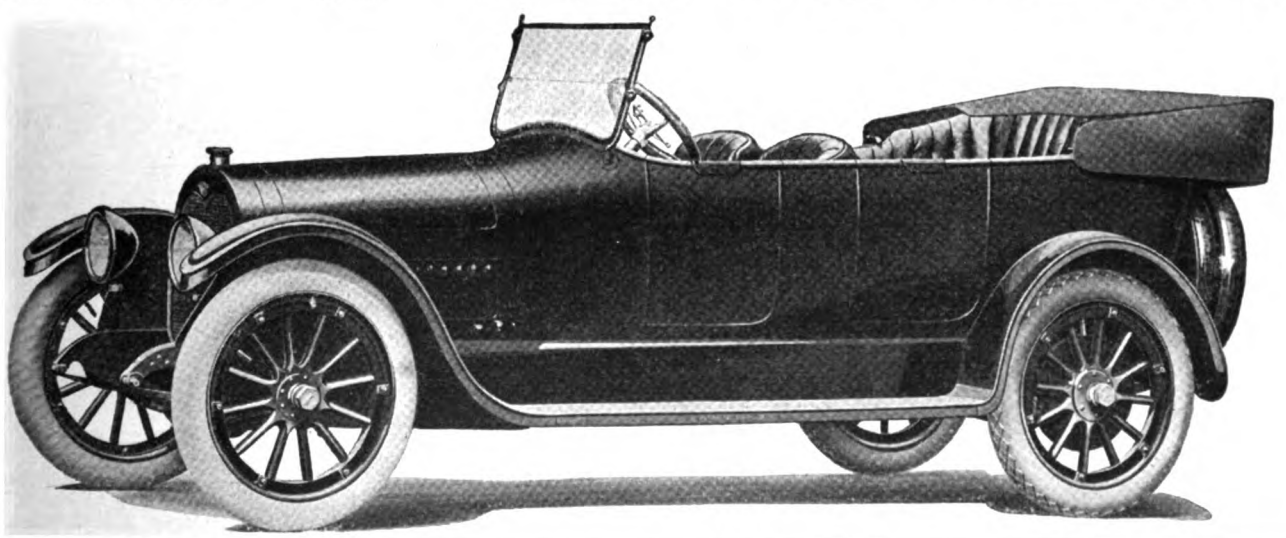
As far as we can determine, the Apperson is the only car in America whose actual manufacture is being supervised today by the men who built cars with their own hands twenty-five years ago

The Apperson Brothers are without doubt America's most experienced car manufacturers.

Apperson Brothers Automobile Company

KOKOMO, IND.

APPERSON



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Letters on No. 3 LAMINUM

The MATERIAL for SHIMS

Syracuse, N. Y., Jan. 3, 1917.

Laminated Shim Co., New York City.

Gentlemen:—

I have been in the repair business for the past 7 years and have overhauled quite a few motors.

Nothing suits me better than to take off a bearing cap and find laminated shims; they are certainly my delight. Laminated Shims have often made taking up and scraping bearings a pleasure to me.

One time in particular that I must tell you about. Two years ago I was sent out of town to bring back a Chalmers "40" that had a loose bearing in it. The owner had left our garage after receiving a few light repairs, while on a touring trip. He had gone about 25 miles when his motor began knocking. He telephoned in and stated his troubles.

I was sent on the job. The car was in a farmhouse in a barn. I took off the base and located the loose bearing; it was on a connecting rod.

The tourist wanted it fixed up so that he could resume his travels. I told him I did not know what I could do till I got the cap off. As soon as I got the cap off I found, much to my satisfaction, "Laminated Shims."

I told him right there that he could resume his trip in a short time.

I tore off 2 strips on each shim before I got my bearing. It only required 2 scrapings and the job was finished.

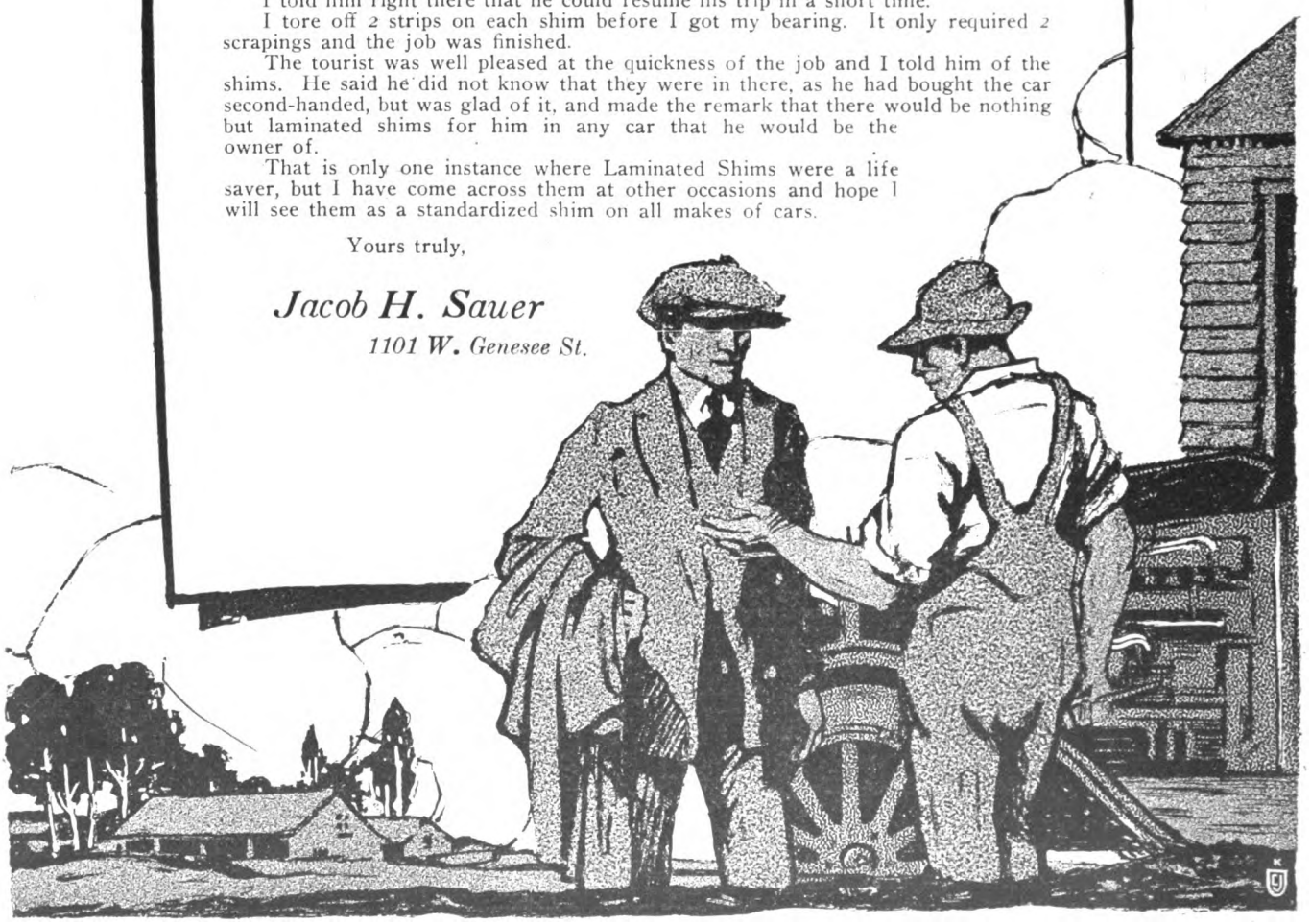
The tourist was well pleased at the quickness of the job and I told him of the shims. He said he did not know that they were in there, as he had bought the car second-handed, but was glad of it, and made the remark that there would be nothing but laminated shims for him in any car that he would be the owner of.

That is only one instance where Laminated Shims were a life saver, but I have come across them at other occasions and hope I will see them as a standardized shim on all makes of cars.

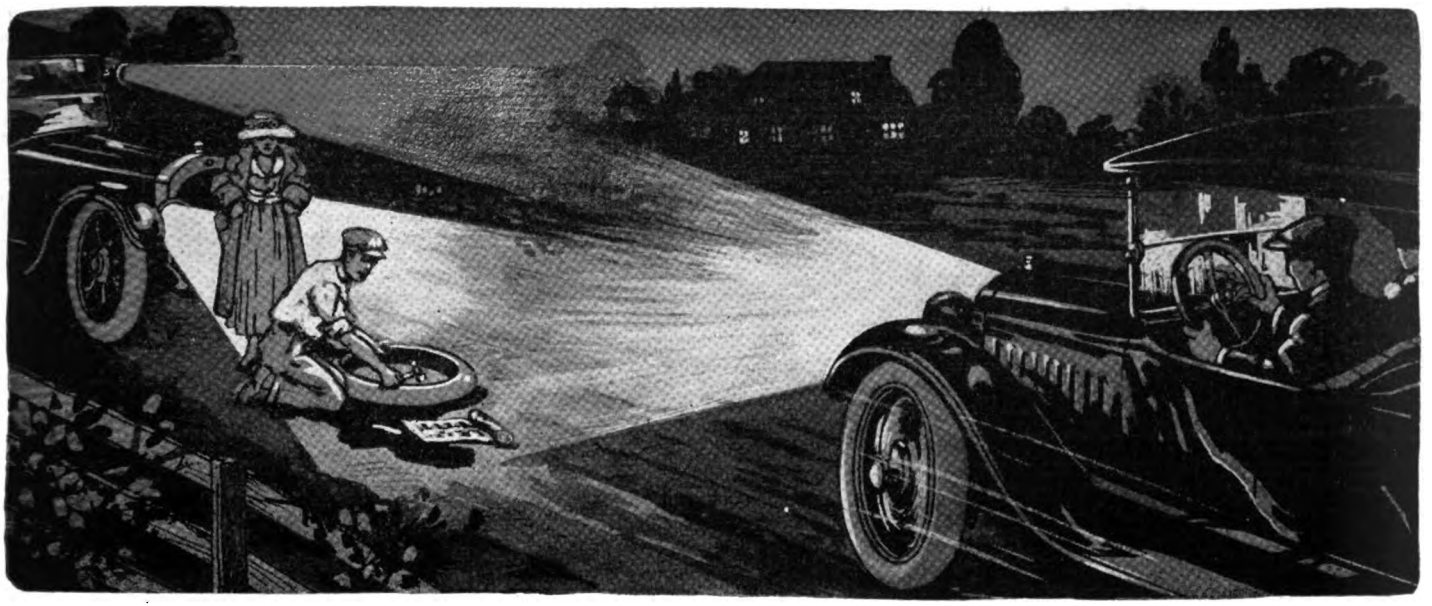
Yours truly,

Jacob H. Sauer

1101 W. Genesee St.



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Searchlight and Safety Light —For Safe Night Driving

THE Red Spot Searchlight—the double duty searchlight—goes far to make after-dark driving as safe as daylight driving. A keen, steady beam is directed, at a touch of your finger, just where you want it, and it stays there, steady and true, without rattle. You can have a concentrated beam or diffused light—the adjustable focus immediately responds.

And in any emergency, a touch of a button ***instantly*** changes the white light beam to a powerful, red danger signal that ***must be seen.*** You are ***protected***—when making roadside repairs; turning; crossing, or stopping. Red Spot will stand guard if you are stalled or in an awkward position, and in case of need will act as a tail light.

These are all ***extra*** advantages—you get two searchlights in one—for the price of one. The Red Spot Searchlight is exceptionally well-built—some of the constructional advantages are mentioned below. But ***see*** a Red Spot—ask your dealer to show you one, admire its symmetrical lines and splendid finish, and remember that you pay no more for a Red Spot Searchlight than you do for an ordinary searchlight.

F. W. Wakefield Brass Co., 10 Wakefield St., Vermilion, O.

NOTE THIS

Accurate parabolic reflector, brass—not steel—triple coated copper, nickel, and silver plate highly polished.

Switch, socket, lamp and red cylinder removable from rear in one unit—no risk of damaging reflector.

Tight-fitting bezel and glass with rubber gasket—weather-proof, dust-proof and rattleless.

Universal bracket with smooth-working rattle-proof joint.

Rear-view mirror instantly adjustable; can be used independently of searchlight.

Heavy gauge steel shell, all parts are protected against rust by enamel (baked on, not painted), heavy nickel plate, or by the Parker rust-proof process.

DEALERS

Even without the red spot feature the Red Spot, by the sheer force of its excellence of design, build and appearance would sell itself right off your shelves. Send along your inquiry for terms and literature on this mighty interesting, rapid seller.

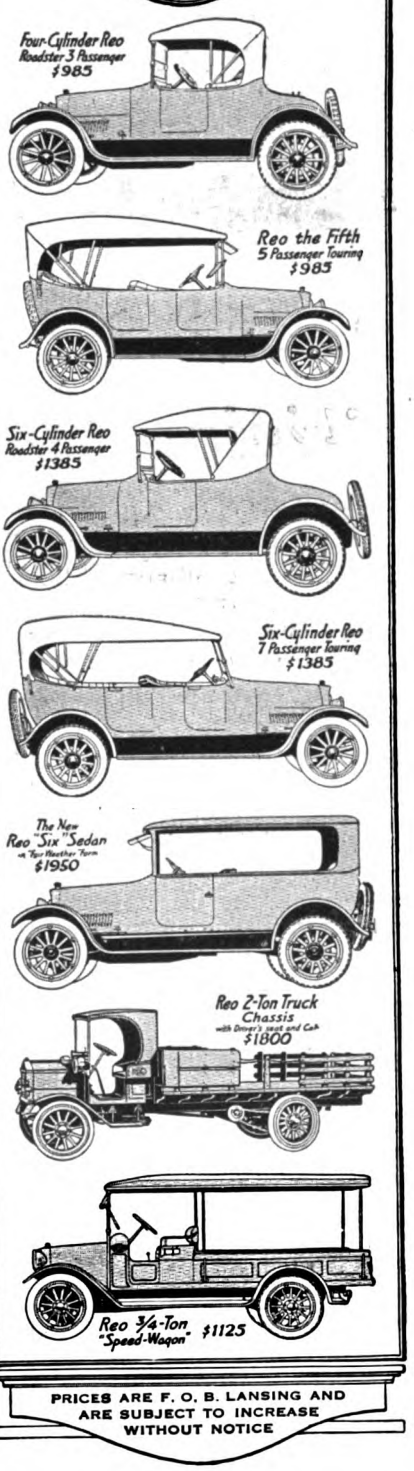
Red Spot (Complete) $7.00
Red Spot (Without Mirror) $6.50



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REO

THE GOLD STANDARD OF VALUES



PRICES ARE F. O. B. LANSING AND ARE SUBJECT TO INCREASE WITHOUT NOTICE

Standardization and Interchangeability

THESE ARE QUALITIES that have attained their highest development in America.

SINCE THE WAR other countries are learning the great advantages of standardization—which is the only way to produce interchangeable parts. Better parts can be made—and faster.

REO WAS ONE of the first concerns in the world to standardize motor cars—to make every part absolutely interchangeable.

TREMENDOUS STRIDES have been made in the past twenty years in perfection of automatic machinery and precision in manufacturing.

REO STILL LEADS and that is one reason for the low maintenance cost of Reo Automobiles and Reo Motor Trucks.

FROM YEAR TO YEAR the cost of operation and upkeep is lower than that of any others of similar power and capacity.

AND THAT APPLIES to Fours and Sixes alike —to passenger automobiles and motor trucks.

LOW UPKEEP is a Reo attribute and that is due, first to standardization of all parts; second to the use of the best materials; and finally to Reo workmanship, than which none is better.

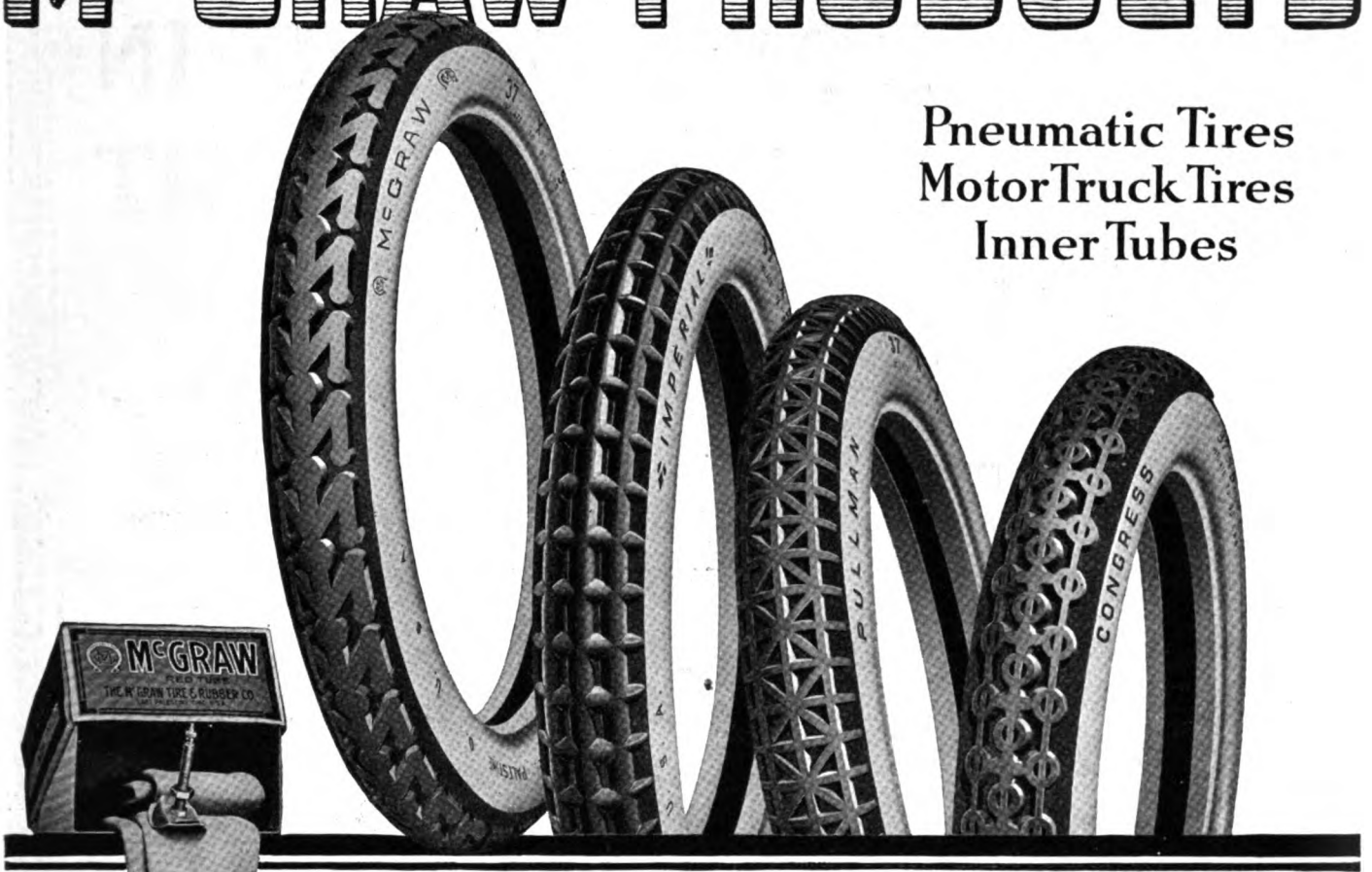
THE WISEST distributors select the Reo line in preference to any other because this product represents longer and riper experience as well as greater financial stability.

THE REO GUARANTEE passes at par in any part of the world—and it is backed by Reo service.

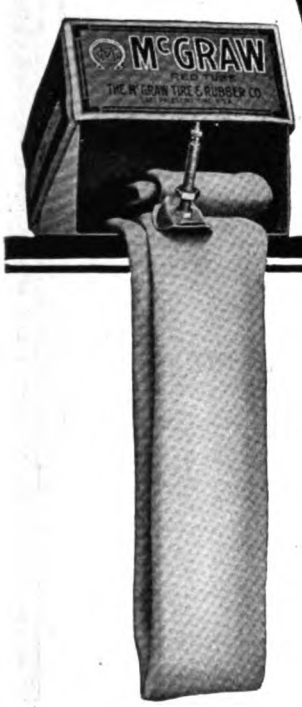
REO MOTOR CAR COMPANY
LANSING MICHIGAN

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McGRAW PRODUCTS



Pneumatic Tires
Motor Truck Tires
Inner Tubes



Growth

FOR eight years the McGraw business has been building. No spectacular methods of promotion have been employed. A sound sales policy and a meritorious product have alone resulted in making the McGraw one of the largest tire factories in America.

Five to six thousand McGraw-made tires are sold daily; the output for the past year has exceeded 1,000,000 casings and an equal number of inner tubes.

McGraw products—McGraw, Imperial, Pullman and Congress tires and inner tubes are sold exclusively through *wholesale distributors* and their dealers.

The McGraw sales policy has many distinct advantages which assure the distributor a profitable, satisfactory, permanent and growing business. Let us tell you the details.

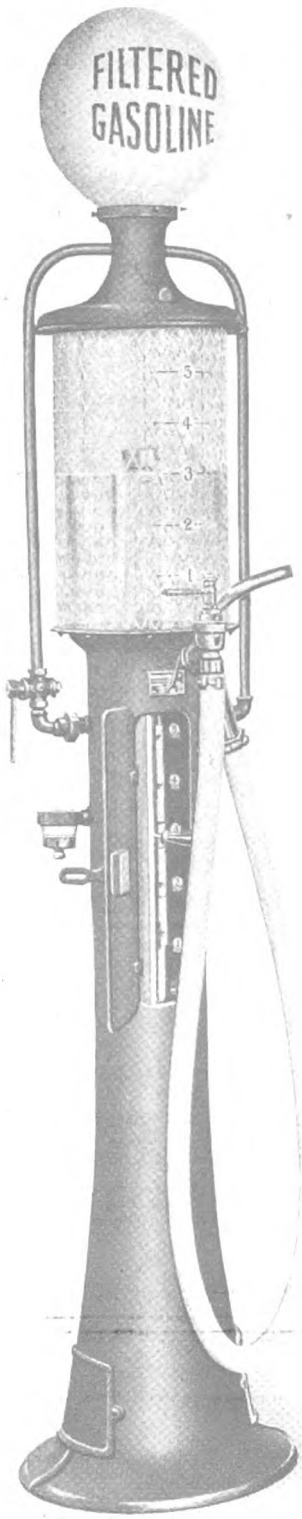
THE McGRAW TIRE & RUBBER CO.

East Palestine, Ohio

Distributing Warehouses ' ' ***New York*** ' ' ***Atlanta*** ' ' ***St. Louis*** ' ' ***San Francisco***

When writing advertisers please mention Motor World—It identifies you

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DON'T STAND IN YOUR OWN LIGHT

Some dealers are as blind as the antiquated pumps they have for delivering gasoline and oils to their customers. They won't realize what the public demands.

GUARANTEE Visible Pumps

Are going to replace all the non-visible, piston-type pumps just as surely as the self-starter put the old hand-crank into the discard.

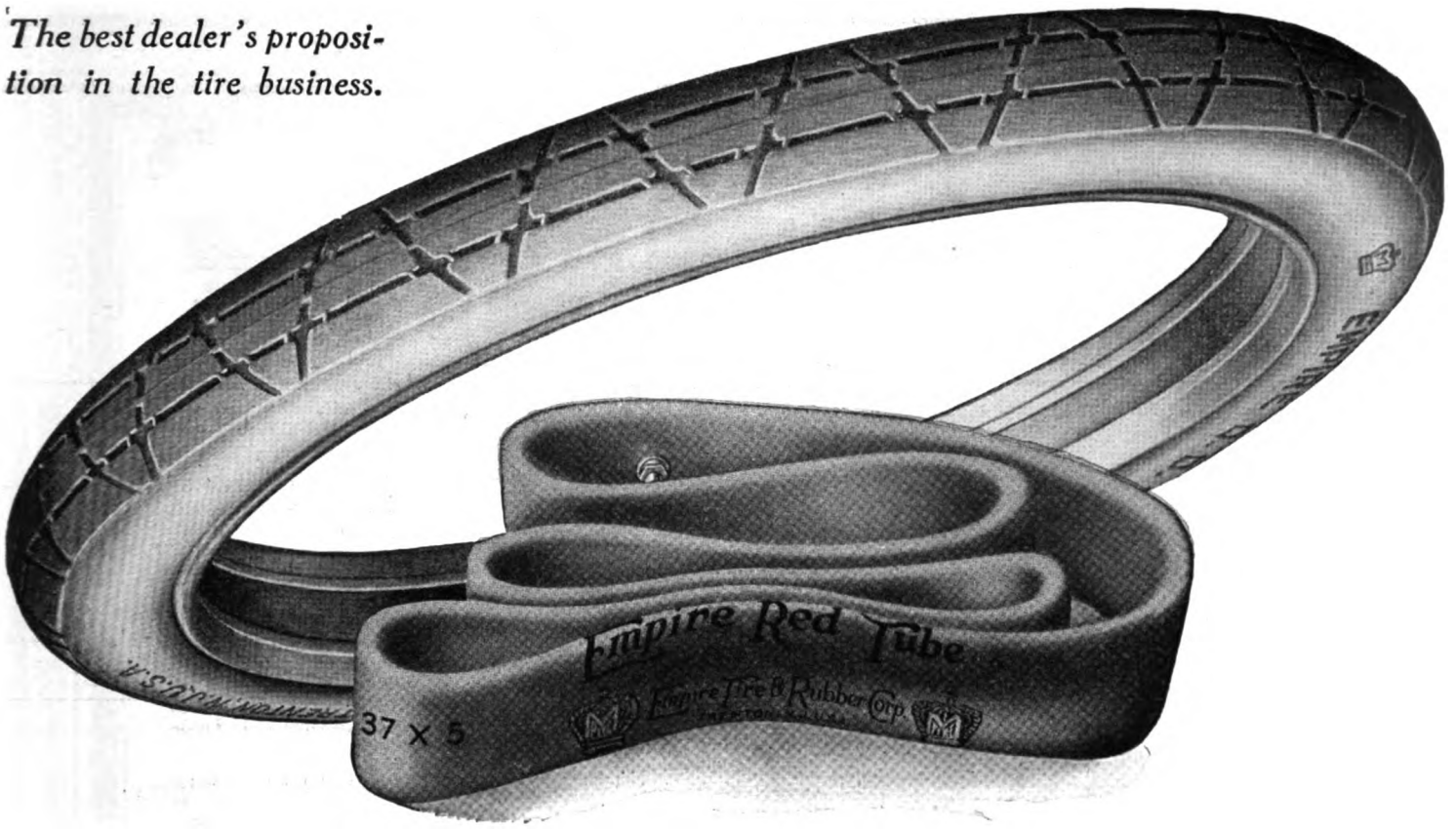
Don't wait until every other dealer and garageman has them. Get in touch with us at once. It will be to your advantage because car owners are insisting on visible measures.

Guarantee Liquid Measure Company

Farmers Bank Building **Pittsburgh, Pa.**

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The best dealer's proposition in the tire business.



The tire is as good as the tube
The tube is as good as the tire

For 10 years Empire Red Tubes have been recognized by the trade and car owners as the best on the market. They have come to be called "the tubes that outlive the car itself."

And Empire Casings have won the same high standing. Actual records prove that the ***average*** Empire, in ***average*** running, will deliver thousands of ***extra miles.***

The same fine materials, the same painstaking workmanship, the same secret processes which for 30 years have made the name Empire famous for long life in rubber goods of all kinds, account for the surplus quality of every Empire tire product.

For dealers the Empire proposition is the best in the field.

The margin of profit is the fairest. The sales are increasing the fastest.

And the advertising is wide-spread, powerful and unique. Our full pages in The Saturday Evening Post, The Literary Digest and elsewhere are signed, not with our own name, but as follows: "The Empire Tire Dealer."

Thus we centre the consumer's attention, not on our factory, but on your store, in his own home town.

Empire advertising thus becomes your own advertising, addressed to the car owners of your own locality.

Write for our proposition today.

THE EMPIRE RUBBER & TIRE COMPANY
TRENTON, N. J.

Empire Tires

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DUPLEX

THE ORIGINAL FOUR-WHEEL DRIVE TRUCK

WHATEVER weather or road conditions may be, the Duplex is dependable—on the job—spring and summer, fall and winter. It is an all-year-round motor truck that hauls capacity loads—3½ tons—through sand and mud, snow and ice, and reduces haulage costs to the very minimum.

Because it is built for service throughout the year and is just as dependable in winter as summer, the Duplex is solving the haulage problem in the Northern states where highways are covered with snow for several months and rear wheel drive trucks are operated with difficulty because of the adverse road conditions.

All energy generated by the powerful Duplex motor is evenly distributed to all four wheels—doubling the pulling power of the Duplex—while the Duplex-Adler differential makes skidding impossible even on ice covered roads.

The Duplex has the strength, the irresistible power and endurance to perform efficiently the most severe haulage tasks. It is durable, and has the stability which insures long life.

Scientific simplicity with fewer parts—gigantic strength with less weight—economical upkeep with reduced operation costs—all are combined in the Duplex—the motor truck that hauls capacity loads anywhere.

Let us send you data showing how profitably the Duplex is solving haulage problems—delivering loads at lowest ton-mile cost—for contractors, road builders, manufacturers, lumber operators. In all fields of industry the Duplex is giving steady, reliable, economical service.

TO DEALERS—With increased distribution our dealer organization is being enlarged. Wire or write for full information.

Address All Communications to Department 101

DUPLEX TRUCK COMPANY

LANSING, MICHIGAN



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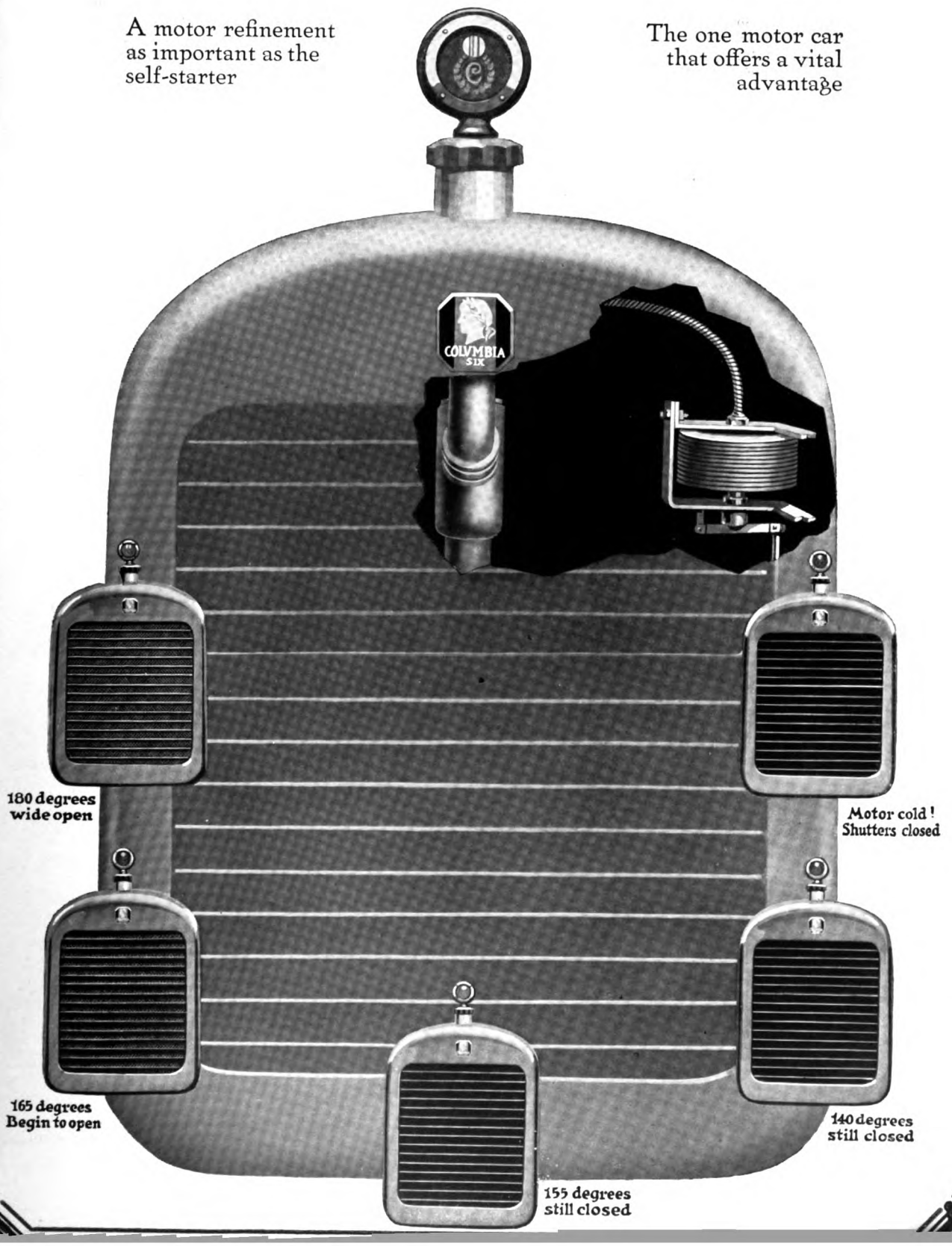
How to Save Gasoline—

The Columbia Six

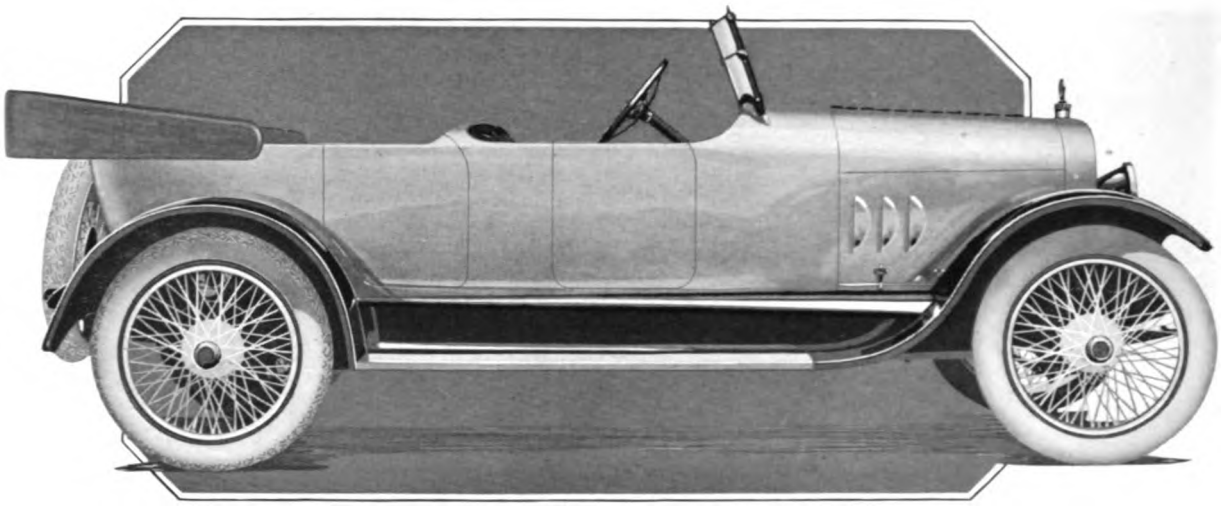
with motor temperature automatically controlled offers the practical solution

A motor refinement as important as the self-starter

The one motor car that offers a vital advantage



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Four-Passenger Sport Model $1450

Price includes five wire wheels, Harrison radiator with "Sylphon" thermostat controlling shutters, and full equipment, including tonneau lamp. Particular care has been given to the details of finish. Genuine leather upholstering; walnut instrument board. Spacious tonneau, with seat tilted at just the right angle. Hassocks instead of foot rail.

Columbia Six

"A Right Product Backed by a Right Policy"



ECONOMY

Thermostatic control of the radiator shutters gives you a better running motor and greater mileage from gasoline. It is a scientific fact that motor heat means motor efficiency. Tests show an increase of approximately *thirty per cent in motor efficiency*, as a result of thermostatically controlled radiator shutters. This is real fuel economy.

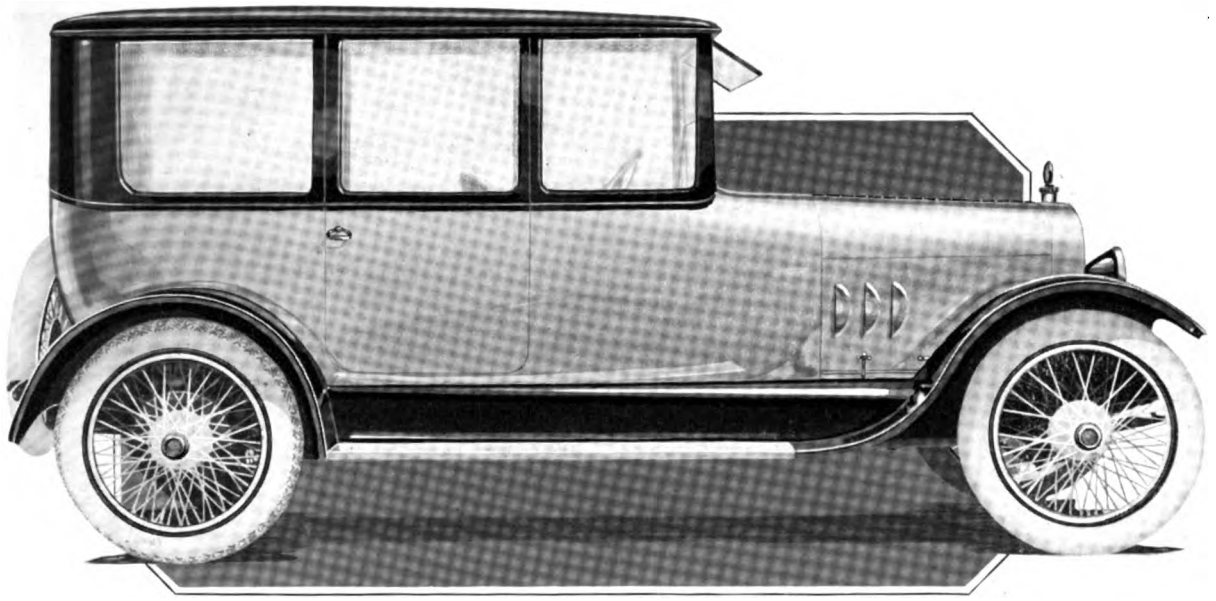
When the motor is cold the shutters are closed. This permits the motor to warm up very quickly. The shutters stay closed till the motor temperature is approximately 180 degrees, at which time they open. You do not have to run several blocks "coughing," "spitting," and "dying out" as is invariably the case with a cold motor on a cold day without this device.

THE announcement of the latest model Columbia Six with automatic control of motor temperature has riveted the attention of the automobile trade on this car.

Hundreds have been shipped and are now in use.

Both dealers and the public now know that our claims for gasoline economy, for higher motor efficiency, for ease of starting, for constant motor temperature, and the many other advantages ensuing from automatic control of motor temperature, are *facts.* They see in the Columbia Six a car that because of this exclusive feature coupled with highest grade construction, is bound to enjoy constantly increasing popularity. It offers the one new improvement in motor car design.

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Five-Passenger Touring Sedan $1995

Upholstered in finest materials. Highest grade equipment in every detail. Staggered doors. Finish, Columbia Blue. Prompt deliveries.
Price includes Harrison radiator with "Sylphon" thermostat controlling radiator shutters.
Full details on request

Columbia Six

"A Right Product Backed by a Right Policy"

IMPORTANT

The first Columbia Six was put into service OVER TWO YEARS ago. We now have hundreds of Columbia cars in service in practically every large city of the United States. Columbia cars are now being sold in Spain, Japan, Sweden, China, Cuba, Java, Australia, New Zealand, and all foreign countries where shipments are permitted. Wherever they are in use, they give satisfaction. The reason for this is plain when you know Columbia construction.

SERVICE

The word "Service" to the Columbia Dealer means exactly what it should mean—those inexpensive courtesies extended to help the purchaser to get the utmost from his car.

The other *Service* is built into the Columbia Six.

Thus Columbia dealers find service cost exceedingly low.

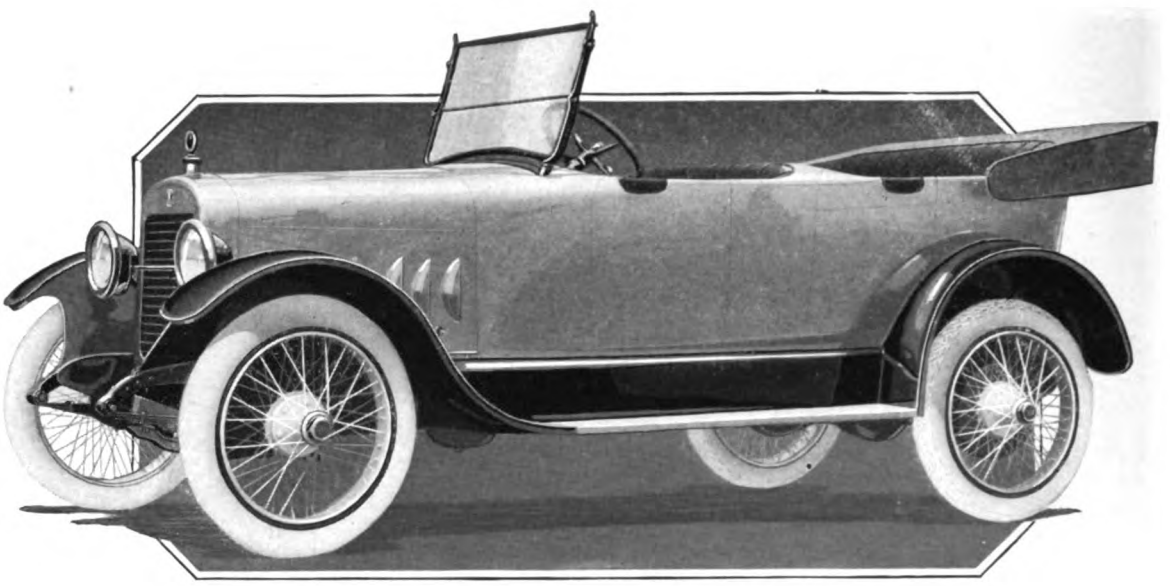
THE radiator shutter alone was undoubtedly a big advance, but it needed the automatic control to complete its efficiency and yield its fullest value.

The virtue of *constant* motor temperature is being more clearly understood each day. It needs no emphasis. The whole question of present day motor efficiency hinges upon the maintenance of *constant motor temperature.*

And there is only one way to maintain motor temperature constant while outside temperatures vary, and that is by the use of thermostatically controlled radiator shutters.

The new sales opportunities created by this exclusive feature, in connection with the demonstrated high grade construction of the Columbia Six, will be at once apparent to the wide-awake dealer.

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Columbia Six Five-Passenger Touring Car $1295

Price includes a Boyce Motometer, Harrison radiator with ventilating shutters and full equipment.
Wire wheels $100.00 extra.

SPECIFICATIONS

MOTOR—Continental, six cylinder, vertical "L" head type with removable cylinder head; 3¼" bore by 4½" stroke. Displacement 225 cu. inches. Actual B. H. P. at 2000 R. P. M. 38 Horsepower.

AXLES—Front—Timken, drop forging "I" beam section, heat treated.
Rear—Timken, ¾ floating; spiral bevel driving gears; two-pinion differential, accessible from rear. Cushioned torque arm.

CARBURETOR—Stromberg with new economy device. Float feed, automatic. Intake manifold integral with cylinder block; intake air heated, thereby insuring the most efficient use of low grade fuel.

COOLING—Circulating pump with especially designed "Columbia" radiator with auxiliary tank made by Harrison Mfg. Co., with shutters on front; 3½" core.

LUBRICATION—Combined force feed and splash system. Force feed to main bearings.

GASOLINE FEED—Stewart vacuum system—17 gallon tank at rear.

ELECTRICAL EQUIPMENT—Ward-Leonard two-unit starting and lighting system manufactured by Robbins & Myers. Bendix drive on starter; ball bearing generator.

IGNITION—Atwater-Kent. Willard storage battery.

CLUTCH—Borg & Beck 10-inch single dry plate; light operating and easy adjustment.

TRANSMISSION—T. W. Warner selective sliding gear; three speeds forward and reverse; chrome-vanadium steel gears, special alloy steel shafts—ball bearings. Unit with motor.

DRIVE—Through springs; torque taken on especially designed torque arm. Tubular propeller shaft with *two Spicer universal joints.*

SPRINGS—Detroit Steel Products Co. Semi-elliptic front, 38" long. Rear, full cantilever, 49" long.

BRAKES—Service, external, contracting 14" in diameter, 1¾" wide, with equalizer. Emergency, internal, expanding. Raybestos lined. Equalized with two rocker-shafts.

STEERING GEAR—T. W. Warner—worm and full gear; irreversible; 18" walnut steering wheel.

FRAME—Detroit Pressed Steel Co.'s pressed steel channel section.

CONTROL—Left side drive; center control, horn button in center of steering wheel.

TIRES—32 x 4 inches; non-skid in rear.

EQUIPMENT—Boyce Motometer of highest grade. Columbia one man top of *genuine Pantasote* with top cover and quick adjustable "Jiffy" curtains.

Rain-vision, ventilating windshield.

Stewart speedometer on transmission. Motor driven horn.

Head lights with auxiliary bulbs; dash and tail lamp.

Robe rail, foot rail, pump, jack and tool kit Tire carrier at rear; demountable rims with one extra rim.

UPHOLSTERING—French pleated genuine No. 1 machine buffed leather; long curly hair, and coil steel springs.

FINISH—Columbia Blue or Columbia Maroon with black running gear. Unusually fine and durable. The Columbia Six looks well when you get it, and retains its high finish.

WEIGHT—2750 lbs.

WHEEL BASE—115 inches.

WIRE WHEELS—$100 extra.

PRICE—$1295 F. O. B. Detroit.

GEAR RATIO—4¾-1.

The Columbia Six is attracting first-class automobile merchants whose names any manufacturer would be proud to add to his roster. There is room for a few more.

Those who have investigated our car and our organization know that our plans for growth and development are sound and convincing. Now is the time to investigate. Write or wire.

The Columbia Motors Company

DETROIT, U. S. A.

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BALDWIN SAYS

PHILBRIN

TRADE MARK

IGNITION SYSTE

QUALITY—not price or sentiment—caused the decision mentioned in this letter.

Ultra efficient ignition was demanded for the many gasoline locomotives which are to transport American troops and supplies behind the battle lines in France—an ignition system capable of developing full engine power; sure and unfaltering despite abuse, poor fuel or faulty carburetor adjustment.

It was specified that the ignition system must be simple in design, free of complications, easily repaired, and —above all—so substantially built that it would outlive the hardest possible service.

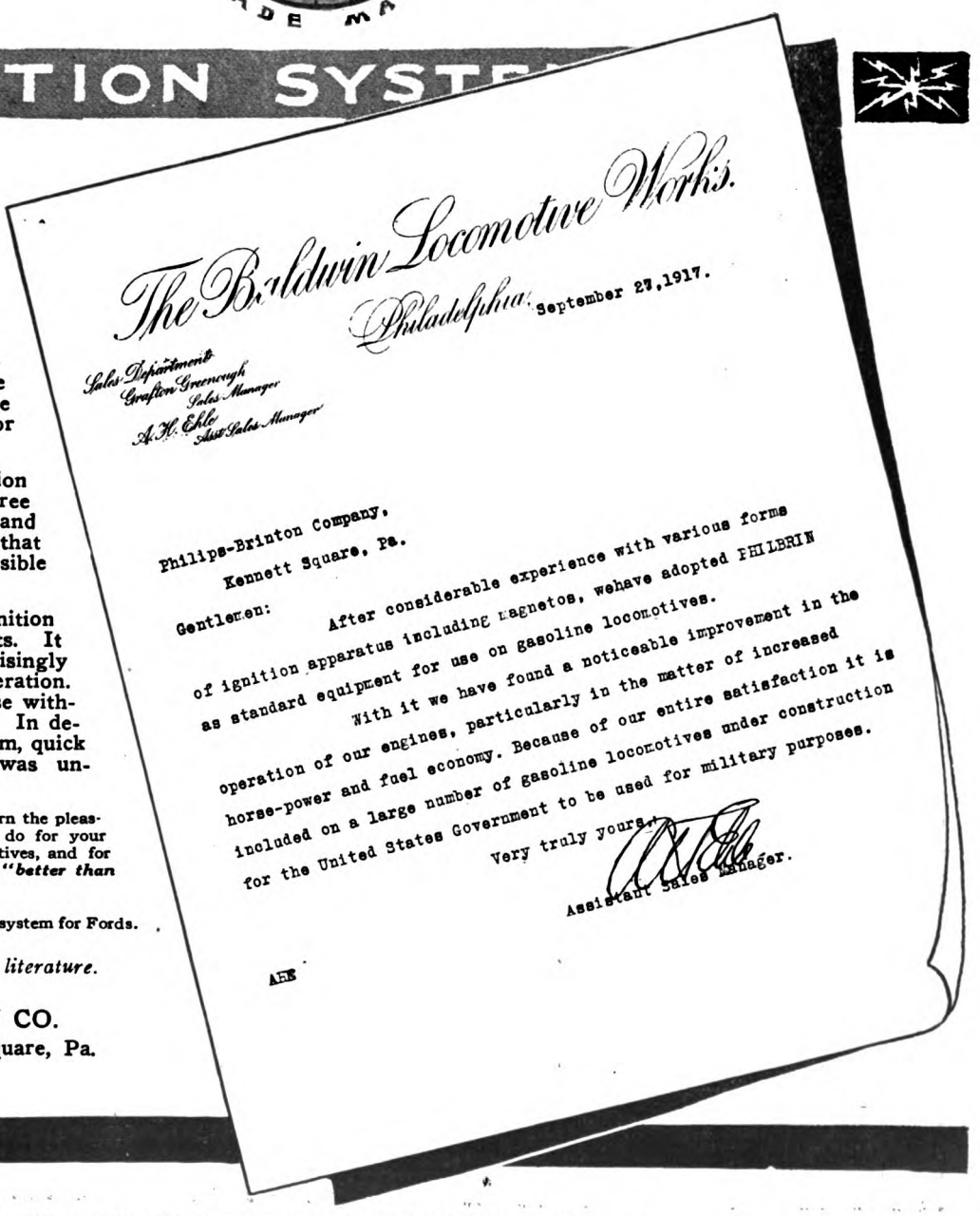
In competitive tests, Philbrin ignition excelled in all these requirements. It outstripped all others by a surprisingly wide margin in economy of operation. It withstood overloading and abuse without the slightest sign of faltering. In development of power, in synchronism, quick response, and dependability it was unequalled.

Get Philbrin ignition for *your* car and learn the pleasure of completely efficient ignition. It will do for your car what it has done for Baldwin's locomotives, and for the many car owners who have insisted on ***"better than ordinary"*** ignition.

Easy to attach. Moderate in price. Special system for Fords.

Write for complete descriptive literature.

PHILIPS-BRINTON CO.
503 S. Broad St., Kennett Square, Pa.



The Baldwin Locomotive Works.

Philadelphia, September 27,1917.

Sales Department
Grafton Greenough
Sales Manager
A. H. Ehle
Asst Sales Manager

Philips-Brinton Company,
Kennett Square, Pa.

Gentlemen: After considerable experience with various forms of ignition apparatus including magnetos, wehave adopted PHILBRIN as standard equipment for use on gasoline locomotives.

With it we have found a noticeable improvement in the operation of our engines, particularly in the matter of increased horse-power and fuel economy. Because of our entire satisfaction it is included on a large number of gasoline locomotives under construction for the United States Government to be used for military purposes.

Very truly yours,

Assistant Sales Manager.

AHE

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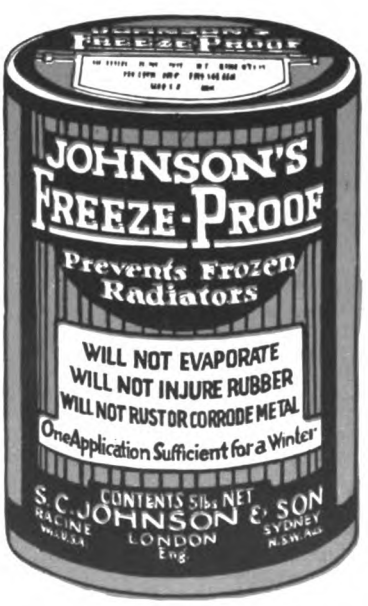
JOHNSON'S FREEZE-PROOF

Prevents Frozen Radiators

THE only way a motorist can be positively sure that his radiator won't freeze up is to use a non-evaporating anti-freeze preparation. You can never be sure of Alcohol or any other product which evaporates with the water. Besides this, the price of Alcohol makes it practically prohibitive for the coming winter.

Does Not Evaporate or Steam

Johnson's Freeze-Proof does not evaporate with the water. One application is sufficient for the whole winter unless the solution is weakened by leakage of the radiator or hose connections—through the overflow pipe—or by boiling over.



Economical and Easy

Johnson's Freeze-Proof is the most economical anti-freeze compound on the market. It is very easy to use—simply dissolve in water and pour into the radiator. One package is sufficient to protect a Ford to 5° below zero; for large cars use two packages to protect to 5° below zero, and three packages to protect to 20° below zero.

S.C. JOHNSON & SON RACINE, WIS

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JOHNSON'S FREEZE-PROOF

Does Not Evaporate or Steam

Absolutely Harmless

Johnson's Freeze - Proof does not injure rubber, cloth, packing or metal of any kind. It does not rust or corrode metal. There is less rust with Johnson's Freeze-Proof than there is with water alone or with a combination of water and alcohol.

Extensively Advertised

Johnson's Freeze - Proof is being very extensively advertised in the motor papers, magazines and weeklies. Its many advantages will make it the standard anti-freeze preparation for the coming winter. Your stock will not be complete without Johnson's Freeze-Proof. It is readily procurable as practically all jobbers have it in stock.

Johnson's Freeze-Proof is put up in packages containing 6½ lbs. net which retail at $1.50 each in the U. S. A. Liberal discounts to dealers. For further information write

S. C. JOHNSON & SON
Dept. MW
RACINE, WIS.



S. C. JOHNSON & SON RACINE, WIS.

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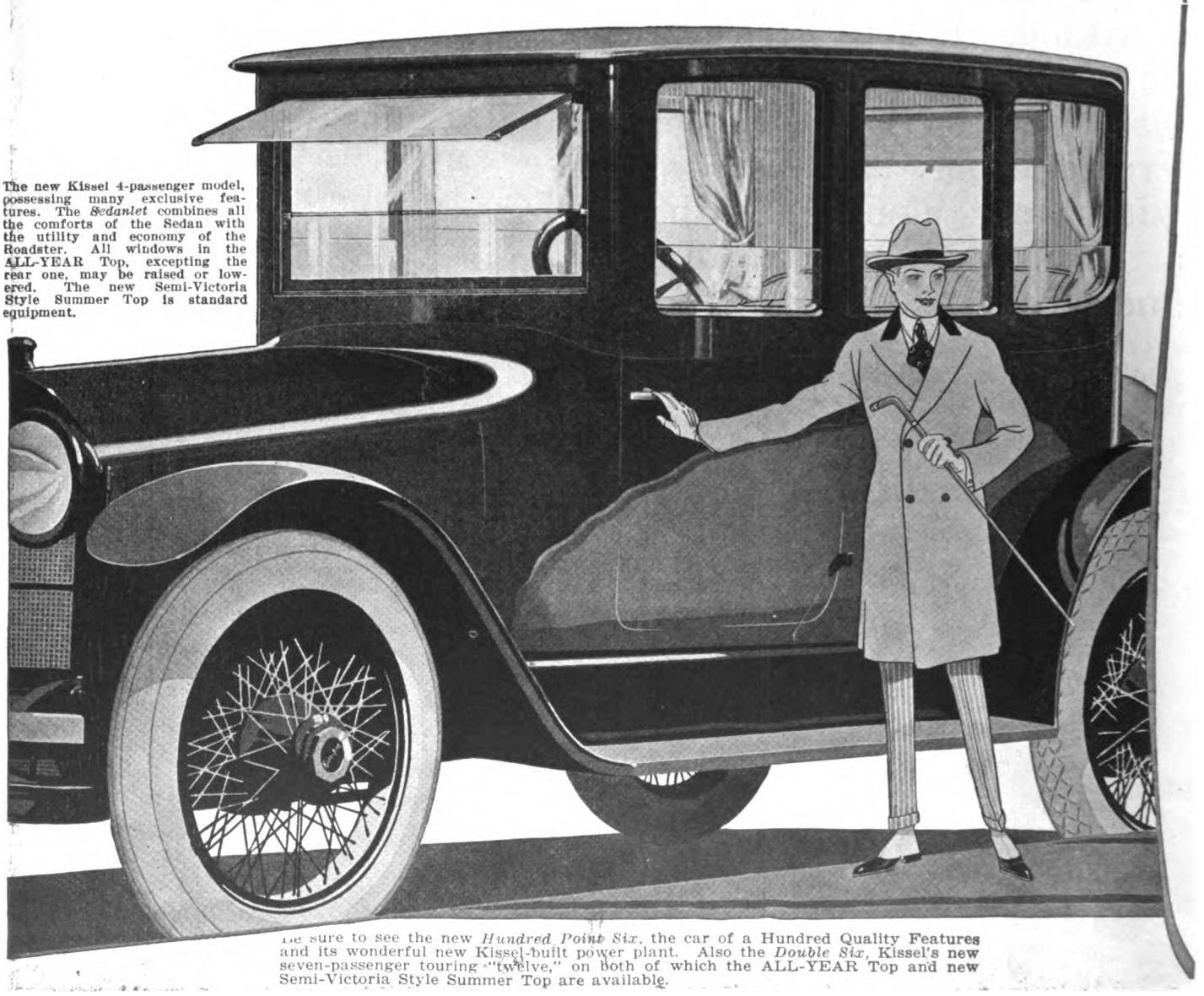
KisselKar ALL-YEAR Car

DEALERS—Inspect the new Kissel models at the nearest Kissel dealer and see the highest development of the two-cars-in-one idea. You will then realize what a big, profitable business investment it is to secure the Kissel agency in your city.

As you examine the different models, and as Kissel's leadership in the ALL-YEAR Car becomes apparent, imagine what it would mean to *you* to supply the year-round demand for these cars in your city.

This annual sales-creating event, which is participated in by all Kissel dealers, is one of the big advantages of being a Kissel dealer. We have an excellent business proposition to make to those dealers who are reputable and wide-awake. *If you are interested, write or wire us to-day.*

Kissel Motor Car Co., Hartford, Wisconsin, U. S. A.



The new Kissel 4-passenger model, possessing many exclusive features. The *Sedanlet* combines all the comforts of the Sedan with the utility and economy of the Roadster. All windows in the ALL-YEAR Top, excepting the rear one, may be raised or lowered. The new Semi-Victoria Style Summer Top is standard equipment.

Be sure to see the new *Hundred Point Six*, the car of a Hundred Quality Features and its wonderful new Kissel-built power plant. Also the *Double Six*, Kissel's new seven-passenger touring "twelve," on both of which the ALL-YEAR Top and new Semi-Victoria Style Summer Top are available.

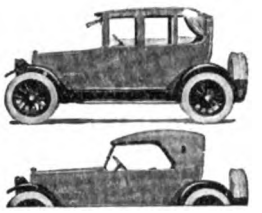
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Show Week
October 13th to 20th

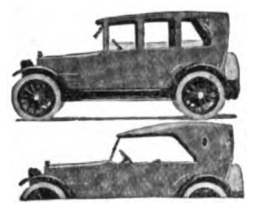
An exhibition of the Kissel idea that changed the Motoring Habits of a Nation



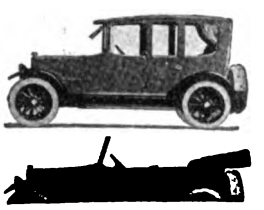
In 1915 Kissel introduced his original two-cars-in-one idea that gave owners a permanently closed car in disagreeable weather and an open, roofless car in summer. Experienced car buyers were quick to appreciate what such an innovation meant—the actual enjoyment of two cars at the cost of one. They have been doing it ever since—in New York, Chicago, Boston—at all motor car centers.



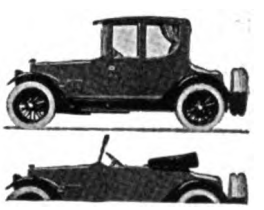
The ALL-YEAR Car—Detachable Sedanlet top mounted on Hundred Point Six 4-passenger Gibraltar Sedanlet body and same car with new Semi-Victoria Style Summer Top. Price complete, $1885.



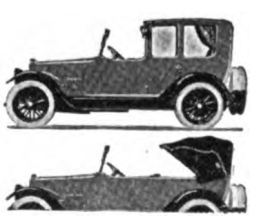
The ALL-YEAR Car—Detachable Sedan top mounted on Hundred Point Six 5-passenger Staggered Door Gibraltar touring body and same car with new Semi-Victoria Style Summer Top. Price complete, $1885.



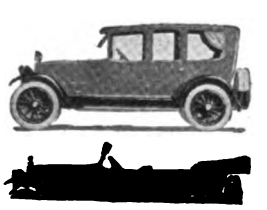
The ALL-YEAR Car—Detachable Sedan top mounted on Hundred Point Six 5-passenger Gibraltar touring body and same car with top detached. Price complete, $1735.



The ALL-YEAR Car—Detachable Coupe top mounted on Hundred Point Six 4-passenger Gibraltar roadster body and same car with top detached. Price complete, $1735.



The ALL-YEAR Car—Detachable Town Car top mounted on Hundred Point Six 5-passenger Gibraltar Victoria body and same car with Victoria top. Price complete, $2050.



The ALL-YEAR Car—Detachable Sedan top mounted on Double Six 7-passenger Gibraltar touring body and same car with top detached. Price complete, $2650.

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GET ACQUAINTED WITH AMAZON

ANNOUNCEMENT

TO JOBBERS AND DEALERS

This announcement is the first of a series of advertisements that will appear regularly in this publication under the caption of "Getting Acquainted With Amazon."

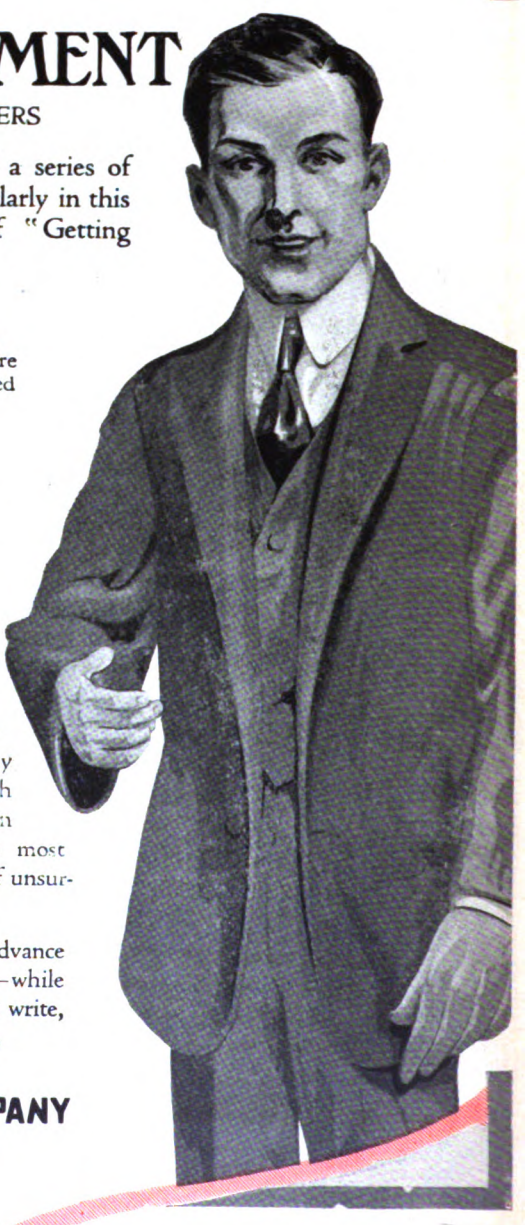
Various points to be discussed are:

1. The TREAD of the Tire
2. The CARCASS of the Tire
3. Exclusive Territory Offered
4. Free Advertising
5. The PROFITS
6. Permanent Customers
7. Our Cordial Relations
8. PROOFS of all Claims

To enable you to easily recognize and follow these discussions as they appear, the same figure will be used throughout the series—look for his cordial smile—it is indicative of Amazon.

By the time you have read the entire series, we are sure you will be seeking our proposition to jobbers and dealers. Many will not wait—but will get in touch with us and secure full advance information direct from the factory. We have a most interesting proposition—and a TIRE of unsurpassable merit to back it up.

If YOU would like to learn now in advance the details of what we have to offer—while your competitor may be "waiting"—just write, wire, phone or call on us here in Akron.



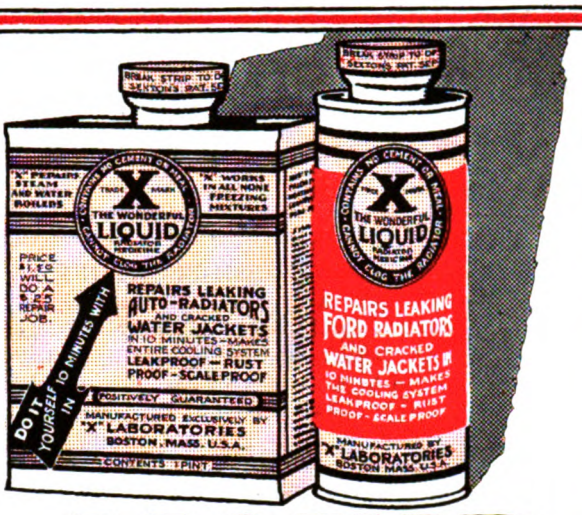
THE AMAZON RUBBER COMPANY

AKRON, OHIO

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"X"

TRADE X MARK



RADIATOR LIQUID



EVERY car owner knows that when his radiator starts leaking he can do one of two things—get some "radiator dope" that will plug the leak for a while, or pay a repair man $10 to $25 for soldering and welding.

Perhaps you are one of the logically minded motorists who long ago realized that radiator cements, flaxseed, meal, etc., clog the delicate passageways of the cooling system, cause overheating and excessive oil consumption.

So there seems to be nothing to do for a leak but to have it soldered. But leaks are so frequent that repair bills would soon cost as much as an entirely new radiator!

Now Chemical Science has focused its best thought on this problem—

It has thrown cements and powders into the discard. It has produced "X."

Welds Leaks Without Metal or Fire!

"X" is a liquid. It is poured into the radiator, circulates freely as part of the water, and turns to a metallic solid over every leak, whether in the radiator, water jacket, hose coupling, motor head or gasket, or elsewhere in the cooling system.

It becomes a permanent weld—immovable under the roughest vibrations and capable of withstanding a pressure of over 500 pounds. Yet when it finds no leak "X" remains in solution—does not gum or in any way interfere with the normal function of the water.

And—bear this in mind—"X" is not a radiator compound, but a scientific process of welding without metal or fire.

Makes Radiators Rustproof, Scaleproof

85% of the automobile cooling systems are choked up by excessive sedimentation, rust and scale—causing overheating and poor engine performance.

"X" Liquid neutralizes the corrosive elements in water. It does away with rust inside of the cooling system.

Moreover, it prevents the formation of scale. The metal is kept clean and bright, the water passages free and clear, and the cooling system as efficient as the day you bought the car.

What "X" Will Do

(1) Seal all leaks permanently.
(2) Eliminate the possibility of future leaks.
(3) Prevent rust from eating away radiator tubes.
(4) Prevent formation of scale, thus keeping cooling system clear.
(5) Work in alcohol or any anti-freeze solution.
(6) Keep the motor much cooler.

$1.50 Size Does a $25 Repair Job
Ford Size 75c Does a $10 Repair Job

Does the work in about ten minutes. No bother, no tinkering, no fuss—nothing to take apart. Just pour "X" in and it works automatically.

All good accessory merchants have been informed about "X." Most of them now have it in stock. Ask your dealer for "X" Radiator Liquid.

Dealers! "X" Will Sell Big in Winter

"X" works in alcohol or any standard anti-freeze solution. Display your stock of "X" prominently during the cold months.

Get Our Special Assortment—Including $1.50 Can FREE

The special assortment of nineteen cans of "X" includes twelve 75-cent cans and six $1.50 cans. Also one $1.50 CAN FREE. Assortment costs you $12—sells for $19.50. Selling literature, posters, etc., included in each assortment. **Ask Your Jobber or Write Direct Today.**

"X" LABORATORIES

630 WASHINGTON ST. BOSTON, MASS.

Distributors: Hughson & Merton, San Francisco; Asch & Company, New York; Gray-Heath Co., Chicago; Sanford Bros., Chattanooga, Tenn.

"X" makes every radiator Leakproof • Rustproof • Scaleproof

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WHEN A LOADED TRUCK SKIDS

against the curb there's a tremendous lateral pressure on the rear wheel.

IN SHELDON SEMI-FLOATING CONSTRUCTION the wheel is mounted directly on and turns with the axle-shaft over whose entire length the lateral pressure is perfectly distributed. In the full floating type of axle, the wheel turns on the axle housing itself, presenting the very minimum of leverage against this pressure and frequently causing the axle housing to buckle with disastrous results.

FURTHERMORE—THE SHELDON BEARINGS, placed both at the inner end of the axle and at the wheel, receive far less wear than those in the full-floating type where they are placed only on the wheel.

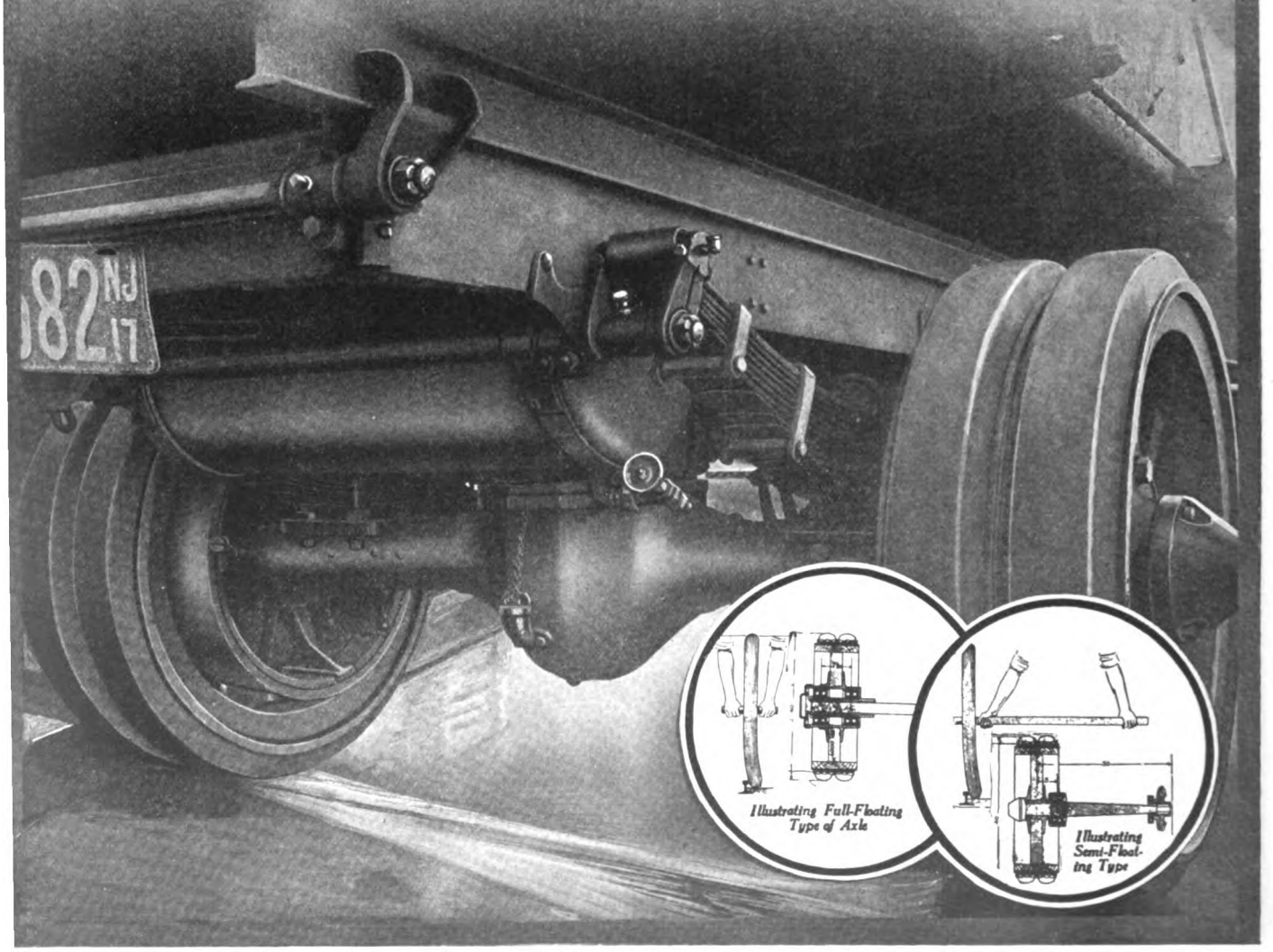
SHELDON WORM GEAR Semi-floating Rear Axles provide absolute insurance against accidents.

SHELDON AXLE AND SPRING CO.

Makers of springs and axles for heavy duty service for more than fifty years.

WILKES-BARRE PENN'A

SHELDON
WORM DRIVE AXLES



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FOR WINTER SALES

Stock Some Thermo Auto Heaters and **Put Them on Display.** You will find them easy sellers. They will repay all the attention you give them.



PRICES
Polished Cast Aluminum...$18
Cast Iron Black Enamel.....$12

THERMO AUTO HEATER

EFFECTIVE AND ABSOLUTELY DEPENDABLE FOR EITHER OPEN OR CLOSED CARS. MAKES WINTER DRIVING PLEASANT. A BIG HELP TO YOUR WINTER BUSINESS.

The Thermo Auto Heater heats a car efficiently and inexpensively by direct radiation—by using gas from the exhaust.
It is very simply, strongly and compactly built and will not get out of order or leak. When the car is started the heater warms up rapidly and is then kept at an even temperature by a thermostat which automatically closes the intake orifice as the heat increases. This makes overheating impossible.

A button at the side permits adjustment of the thermostat. It requires no other attention.

THE THERMO AUTO HEATER is absolutely leakproof; made in two sizes—oblong, 28″ x 4″ x ⅞″, and square, 8″ x 14″ x ⅞″. It can be installed quickly. It can't get in the way. Fits firmly on the floor, not in it. It is raised ¼″ above the floor. It is easily removed without the least damage to the car.



TO INSTALL

Cut V in exhaust pipe with hack saw. Clamp brass casting over same. Bore three holes in floor of car, opposite openings in bottom of heater. Screw nipples directly into heater and insert in floor. Put on lock washers and nuts to hold heater in place. Screw brass elbow on centre nipple and clamp flexible tubing to elbow. Saw off excess tubing.

Dealers—Write for proposition and get ready for profitable business this winter.

Cox Brass Manufacturing Co.

Established 1872 **ALBANY, N. Y.**

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AUTO LIQUID VENEER

Now Cleans THOUSANDS of Cars

The biggest and most progressive auto supply houses are selling large quantities of Autc Liquid Veneer. Dealers all over the country are RE-ORDERING, among them such well-known concerns as the D. Earl Rogers Company, Wheeling, W. Va.; Little Joe Weisenfeld Company, Baltimore, Md.; J. B. Hodges, Johnstown, Ohio; W. S. Birnie & Son, Rome, N. Y.; Gray's Motor Car Company, Newark, N. J.; L. G. Graff, Fremont, Mich., and Fullerton Garage, Curwinsville, Pa. There are hundreds of others.

MOTORISTS ARE TURNING TO AUTO LIQUID VENEER. It's the one cleaning and polishing preparation that does not collect dust or leave a greasy film. It's the one preparation you can stand back of with absolute confidence.

IT SAVES 90% OF WASHING. The spray treatment removes dust, mud spots and road tar, without scratching, in from ten to twenty minutes. It preserves and renews the carefully varnished surface, while washing dulls and destroys the finish in a short time.

IT PAYS YOU NEARLY 70% PROFIT AND IS HEAVILY ADVERTISED. Our extra profit offers are big money makers for you because the goods MOVE QUICKLY. Auto Liquid Veneer is heavily advertised to motor car owners who know Liquid Veneer and have confidence in it through their long acquaintance with it as a household preparation.

If you haven't stocked Auto Liquid Veneer yet, get it from your jobber, or if you want more information write to us. Complete Outfit retails for $1.50.

BUFFALO SPECIALTY COMPANY

Buffalo, N. Y. U. S. A.

Bridgeburg, Ont. Canada



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RADIATOR NEVERLEAK

The Marvelous New Liquid That Mends Leaky Radiators

In the few weeks that Radiator Neverleak has been on the market, it has been acknowledged by dealers and jobbers everywhere to be the really 100% successful preparation for making radiators leak-proof. It is almost magical in operation, yet simple beyond belief.

JUST POUR A FEW OUNCES OF THIS LIQUID INTO YOUR RADIATOR (quantity depends on size of radiator), and after running the engine a few minutes all leaks are stopped completely. Leave the Radiator Neverleak in the water. It prevents future leaks and does not interfere with any anti-freezing compounds added to the water.

IT CONTAINS NO MEAL, CEMENT, ACID OR SEDIMENT to clog or impair the cooling system. It is entirely different from all other preparations offered for similar purposes. It also tends to prevent rusting and the formation of scale.

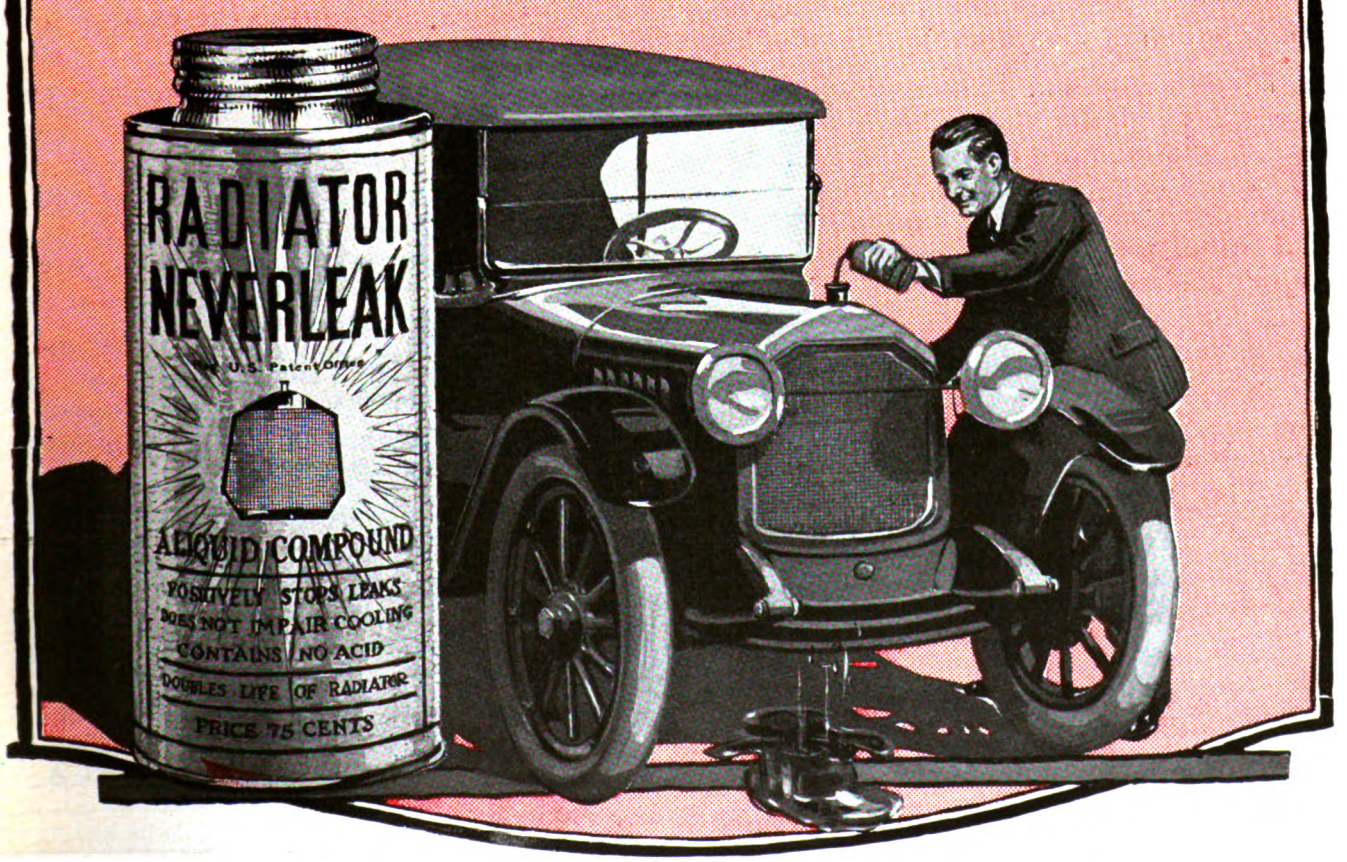
BEWARE OF MEALS AND CEMENTS which deposit a sediment and form a coating in the interior of the radiator and water jacket, thereby impairing the cooling system from 25% to 50%. Play safe, sell the reliable Radiator Neverleak, sold on the guarantee of satisfaction or money back.

SEVENTY-ONE PER CENT. PROFIT FOR YOU, and backed by a big advertising campaign which is soon to appear. It has the backing of the Liquid Veneer people and is bound to be a big seller. With thousands of radiators leaking every day, the market is unlimited. Two sizes, retailing for 50c and 75c. Further information gladly supplied.

BUFFALO SPECIALTY COMPANY

Buffalo, N. Y. U. S. A.

Bridgeburg, Ont. Canada



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A Truck and Name With a Record For Plain Efficiency Second to None!

"WHY didn't I make the change sooner?" the purchaser of an **International Motor Truck** recently asked one of our salesmen. It is a question that sooner or later passes through the mind of say 99 per cent of the men who make the change to International conveyance.

The salesman knew the answer to the question, and it was not to the purchaser's discredit. The latter simply had no way of comparing either the service rendered or the cost of maintaining his horse-and-wagon equipment with the service and cost of motor trucks. Long time is required for the business men of the country—juggling, at the same time, a dozen problems in addition to the hauling problem—to learn the facts. Long time is required to convince them of the loss they are sustaining through the use of out-of-date equipment.

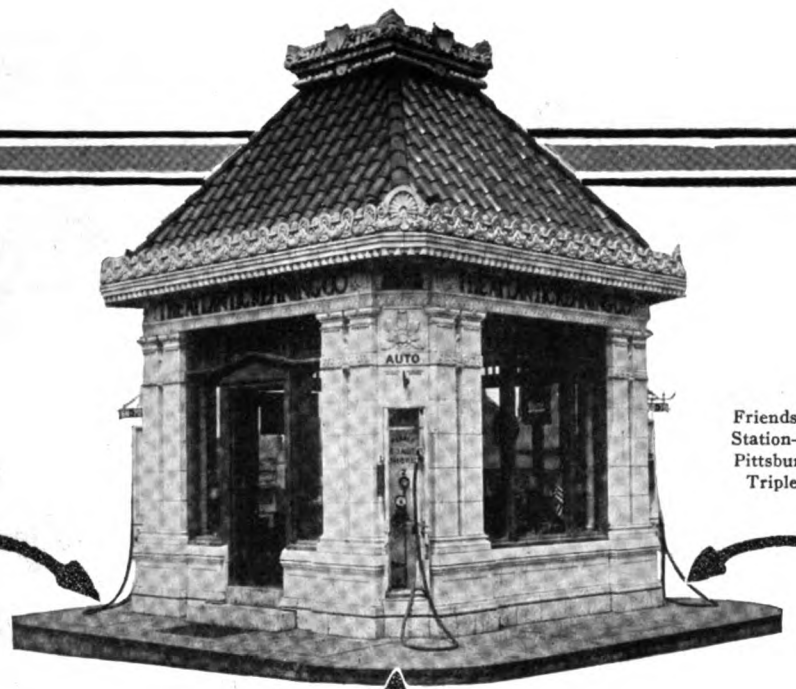
We can cite many examples in order to show the tenacity with which the **International Motor Truck** clings to its job. We have figures in abundance that we will submit to prospective motor truck owners that will show them the exact relative efficiency of horses and motor trucks, and prove the superiority of the International. Men who buy on these figures are duplicating the figures in their own business every day.

Eighty-nine International branches in principal cities are rendering attention of the kind that truck owners want and appreciate. Here are on display the late models, ranging in capacity from 1500 pounds up, attractive trucks at moderate prices, with long life built into them. Write for full information.

International Harvester Company of America

155 Harvester Building (Incorporated) Chicago U S A

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Friendship Ave. Gasolene Service Station—The Atlantic Refining Co., Pittsburgh, Pa. Equipped with Triplexd—The Permanent Hose

No Ordinary Hose

"TRIPLEXD"

is built for permanent service.

ITS CONSTRUCTION, evolved through a decade of experience in hose making, insures years of perfect wear even under the strain of hard constant usage.

TRIPLEXD MEANS TRIPLE CONSTRUCTION, triple strength and more than triple life. There are three layers—an inner coat of flexible metal tubing over which and interlocked with it is a second coat of special gasolene rubber and the whole bound together with a third and outer coat of strong woven fabric.

THE METAL LINING PREVENTS the gasolene from coming in contact with and rotting the rubber and thus insures a clear liquid without residue. A claim which is conclusively proven by actual test.

METAL HOSE & TUBING CO. INCORPORATED RAYMOND & TILLARY STS. BROOKLYN, N.Y.



"TRIPLEXD"

is extremely flexible and yet cannot kink. The outer fabric is woven to the maximum tolerant bend of the metal tubing and must therefore break before any joints can open.

TRIPLEXD IS GUARANTEED for one year no matter how or where you buy it. In actual practice it wears from 2½ to 3 years. It is this remarkable strength and reliance that has made possible its immense popularity. TRIPLEXD is standard, today, on 48 per cent of all gasolene pumps.

THE FACT, TOO, THAT **TRIPLEXD** is approved by the Underwriters' Laboratories means reduced insurance rates.

Truly—this is no ordinary hose—*Specify* TRIPLEXD *on your next pump outfit.*

METAL HOSE & TUBING CO. INCORPORATED RAYMOND & TILLARY STS. BROOKLYN, N.Y.

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SAFETY 5 MINUTE VULCANIZER

Price
$1.50



Showing the Simplicity of SAFETY Operation and the box of 12 SAFETY Patches that come with every SAFETY Outfit.



The SAFETY 5-Minute Vulcanizer was awarded Priority of Invention by the United States Patent Office, May 12, 1917.

SAFETY is the safe vulcanizer to use —the safe vulcanizer to sell. You are absolutely protected by its patents.

Hot After Winter Business

The best way to make season-old tires pull through a winter of service is to take care of them. And the most efficient care is to repair every tube cut, puncture or blow-out with a SAFETY 5-Minute Vulcanizer.

SAFETY Patches make permanent repairs that not only close up cuts and tears, but re-enforce the repair until it is often stronger and more durable than the original surface of the tube.

The SAFETY 5-Minute Vulcanizer pays for itself the first time it is used. Tell your customers, and **profit by the resulting sales.**

Dealers find SAFETY 5-Minute Vulcanizers among the fastest selling accessories. **Strong for sales in the dull winter months.**

Write for Complete Details and liberal Dealer Discounts.

Safety Vulcanizer Mfg. Co.

213-215 Federal Ave., South, Mason City, Ia.

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"Winter Business— Cold Weather Made Profitable"

Red Head
TRADE MARK REGISTERED

PRIMING PLUGS



Ford
⅜"-18
Metric

All Sizes
$1.50

Thousands of Ford owners change to priming plugs as soon as the first chill is felt. This will be the greatest priming plug season known because there are nearly two millions of Ford cars in use.

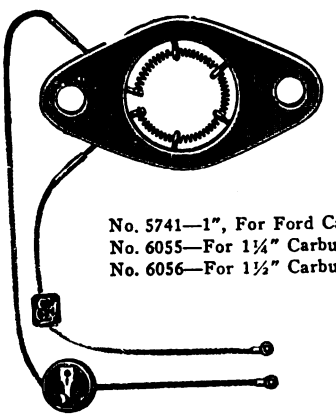
To get your share of this enormous business, push the sale of Red Head Priming Plugs. They make an inexpensive, sure and quick starter. Gasoline injected through the petcock of the Red Head Priming Plug flows directly to firing point and is vaporized by the heat of the spark and instantaneously ignited.

Red Head Priming Plugs are popular with Ford owners because they are the most efficient spark plugs ever designed for the Ford motor: Long body—oil drip bend and Vitristone, the new artificial stone insulator, guaranteed not to crack from the heat.

EverGood
TRADE MARK

ELECTRIC PRIMER

Pat. May 5, 1914



No. 5741—1", For Ford Cars. $1.80
No. 6055—For 1¼" Carburetor. 2.25
No. 6056—For 1½" Carburetor. 2.70

The EVERGOOD Electric Primer heats the gasoline as it is sucked out of the carburetor and causes it to vaporize and ignite on the first turn.

This efficient device consists of a fibre gasket with German silver wires coiled around the inside rim. The flange is inserted between the carburetor and the intake manifold in place of the regular gasket. Connecting wires run to a switch on the dash, and dry cells or storage battery.

Turning the switch on sends an electrical current through the German silver wires, which have a low resistance and radiate heat so that in a few seconds the intake manifold and the top of the carburetor are heated.

This does away with the hard labor of hand cranking. If a car is equipped with a starter and storage battery, the EVERGOOD Electric Primer will save a drain on the battery, which occurs when running with the starter long enough to warm up the motor.

EverGood

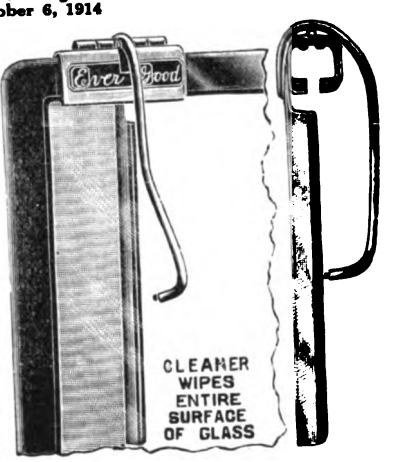
WINDSHIELD CLEANER

For Round, Oval or Square Tubing. U. S. Patent No. 1,112,793, October 6, 1914

The EVERGOOD—the original and only successful mechanical Wind Shield Cleaner—is now eight years on the market; thousands in use. It travels along the top of the wind shield, with the rubber blade having the entire surface of the upper glass panel in its sweep. As the cleaner is drawn across the shield, the rubber blade squeezes the rain or snow off the glass. When the cleaner is drawn back, the rubber blade reverses, thus making the cleaner double-acting.

Clamps on the frame—no holes to drill. Inconspicuous on the shield and need not be removed in good weather.

No. 6548—For Round Shields, Black $2.00
Nickel $2.50
No. 6538—For Square or Oval Shields, Black $2.50
Nickel $3.00



Write for Trade Prices

Emil Grossman M'f'g Corp'n, Bush Terminal Building No. 20, Brooklyn, N. Y.

Chicago, 1253 Michigan Avenue

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Hupmobile

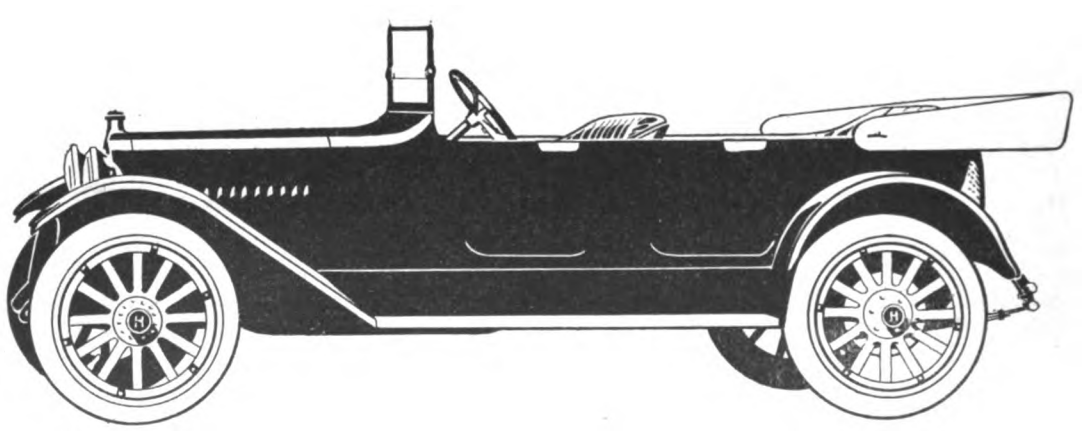
We are willing to rest the Hupmobile on three counts—beauty, performance, value.

It is the Year-Ahead Beauty-Car.

It is the four that outpoints not only other fours, but multi-cylinder types as well.

Its value is firmly established by the satisfaction of thousands of owners.

Hupp Motor Car Corporation,
Detroit, Michigan



When writing advertisers please mention Motor World—It identifies you

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AN OPPORTUNITY FOR 100% PROFIT ON THE BEST ANTI FREEZING SOLUTION



One charge of Orez Anti-freezing Solution in the fall insures the car against freezing until the next spring.

TRADE **OREZ** MARK

ANTI FREEZE SOLUTION

Dealers—Because of its low price and entire efficiency Orez has met with tremendous success. It is unquestionably the cheapest and best anti-freeze solution on the market.

Orez is a secret composition of chemicals. It is not an acid and will not attack metal. It will not injure rubber and no lime can form in water where it is used. It is non-poisonous to the skin.

Orez is shipped to you in crystal form in 50 gallon bags—you knock the head out of an old barrel, pour in the crystals, fill with water and stir until it dissolves—10 minutes' work.

We pay the freight and pay for the barrel on the first order, and also furnish the spigot.

We supply effective advertising matter with shipment when desired.

Remember the name—Orez. It's zero spelt backward.

Smallest quantity sold is 50 gallon bag—cost to you, $12.50—25c per gallon—you sell for $25.00, or at 50c per gallon.

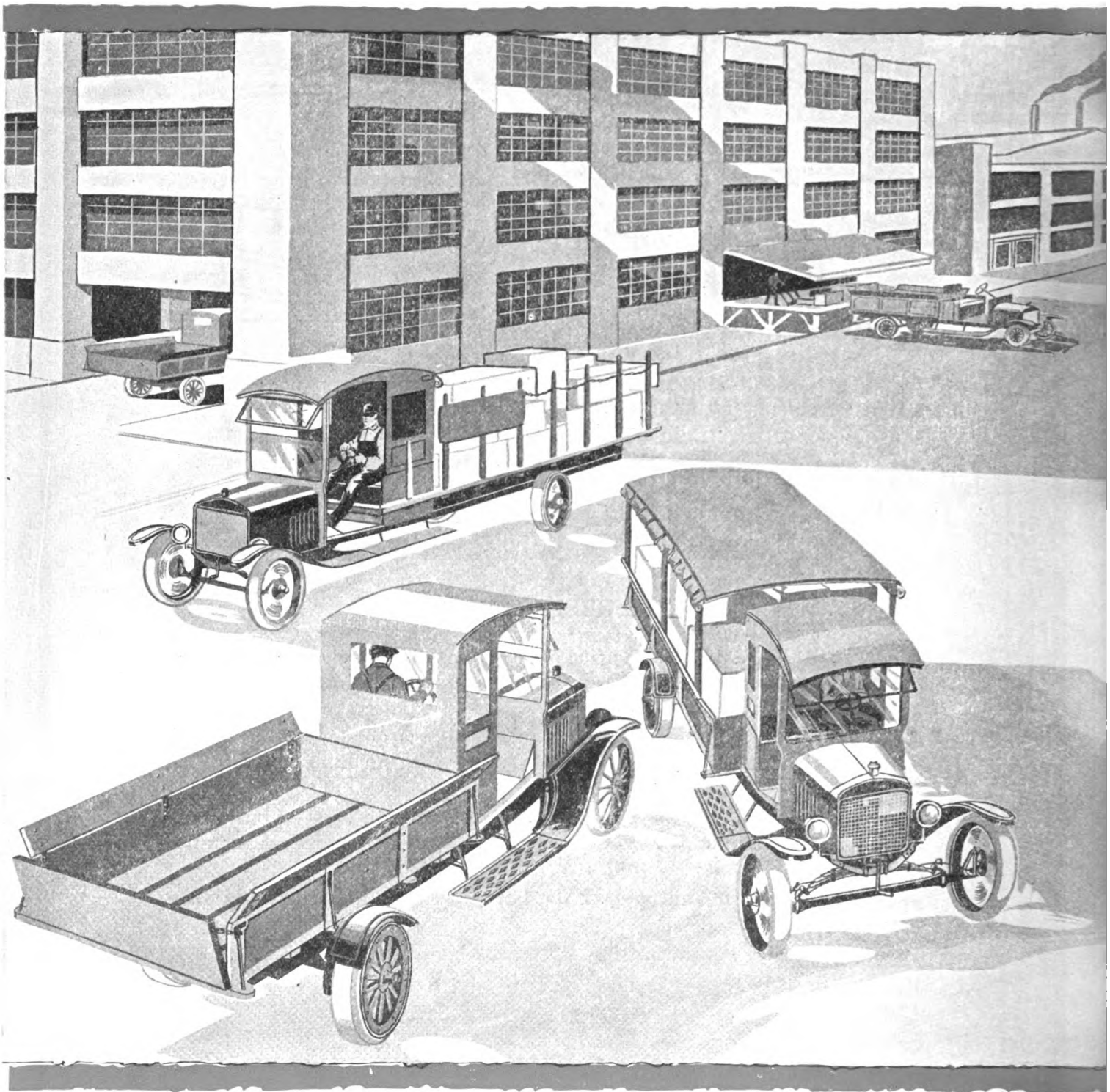
Get ready for winter—order at once.

Orez Manufacturing Company

WEST MIDDLETOWN OHIO

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HENNEY



Henney Buggy Branch

Sales Office: Moline, Illinois.

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Truck Bodies



For New Ford Ton Truck
Also Extended Ford Chassis

We offer the trade a complete line of truck bodies that will fit, not only the latest Ford sensation in the traffic world, but also the extended Ford chassis, or any of the truck units now on the market.

A Striking Advantage to the Trade

is that Henney Truck Bodies are standardized—our All-Season Cab Top fits any style of Henney Truck Body. A small stock enables dealers to meet every demand of the trade. Tough hardwood, steel and fine finish combine to make these bodies sturdy attractive and serviceable.

Quick Service—Low Prices

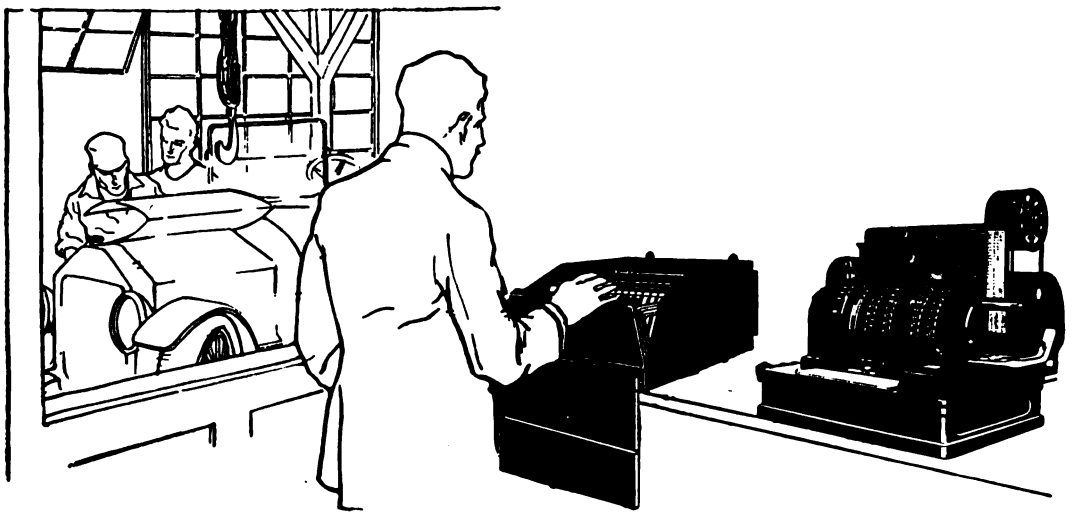
We have the largest, best equipped factory for truck body manufacture. Quick delivery and real selling service are guaranteed from our twenty branches in all sections of the country, where ample stocks of Henney Bodies are carried.

May we send a salesman to help you make up a carload order?

Write for Illustrated Literature giving full information on the Henney Body Line; also for our liberal dealer proposition.

of Moline Plow Company
Factory: Freeport, Illinois.

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Up-to-date System for Garages

Electrically Operated National Cash Register

Greatest labor-saving machine for garages and service stations.

It does 15 things in three seconds.

It gives a separate record of money received for storage, tires, oil, gas, repairs, etc.

Advertises your goods direct to your customers.

It does quickly what helpers can't do.

The New N. C. R. Credit File

Cuts out all bookkeeping of customers' accounts.

No customers' ledger, blotter or daybook.

Every customer's account balanced to the minute.

Complete record with one writing. Saves time and work.

Customers like it; it saves their time.

Prosperity is increasing. Hence don't delay.

Order now and get the profits which our system will make for you.

It more than pays for itself out of the money it saves. Sold on small monthly payments.

Old cash registers repaired, bought, sold, rebuilt and taken in exchange for new registers.

To Dept. 34,
National Cash Register Co., Dayton, Ohio

Please send me full particulars of your latest model cash register and the new N. C. R. credit file.

Name_____

Business_____

Address_____

Get the benefit of these prosperous times.

Cut out this coupon and mail it today.

When writing advertisers please mention Motor World—It identifies you

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In The Clutch

The Pilot Bushing

One of the most used bushings on a car, and one of the most difficult for the driver to oil and attend to properly, is the Pilot or Thimble Bushing in the Clutch.

Many types of bearings in this situation become dry, get clogged with dust and dirt, wear quickly, and the result is a sticking and bad acting clutch. Many engine builders are asked to drill the shaft to feed lubrication at this point.

Inasmuch as the Clutch is the very gateway through which power is transmitted to the car, and as it is in constant use by the driver, the ease or difficulty of its manipulation is of vital importance.

Leading manufacturers now know from experience and performance that the most logical type of bushing to use in this out-of-the-way, difficult-to-oil place, is a BOUND BROOK OIL-LESS BUSHING.

It's a simple, practical solution of a problem that has been the cause of much annoyance and expense to many car and truck owners.

These bushings protect the inaccessible parts of a car against neglect,—insufficient lubrication. With or without oiling, they give perfect, smooth-running service. Neglect cannot hurt them, for they contain within themselves sufficient lubricant to last their life-time.

Many companies use them as Pilot bushings without in any way changing the original housing. One company has used over a quarter of a million without a single complaint.

We also manufacture NIGRUM (Impregnated Wood) Oil-less Bushings.

All Genuine Graphited Oil-less Bushings have always been made at Bound Brook, U. S. A.

BOUND BROOK OIL-LESS BEARING COMPANY

Specialists in the manufacture of Oil-less Bushings for more than a third of a century.

BOUND BROOK, NEW JERSEY

READ WHAT LEADING CAR MANUFACTURERS SAY

"I have no record of this part having been replaced in a single instance."

"Your Bound Brook Graphite filled bearing has worked out very satisfactorily for flywheel end of clutch shaft. We would not think of going back to the old type bearing at this point, for the simple reason it would be practically impossible to properly lubricate this bearing at this point."

"We have had no complaints along this line, as we did when using the other type of bearing at this point."

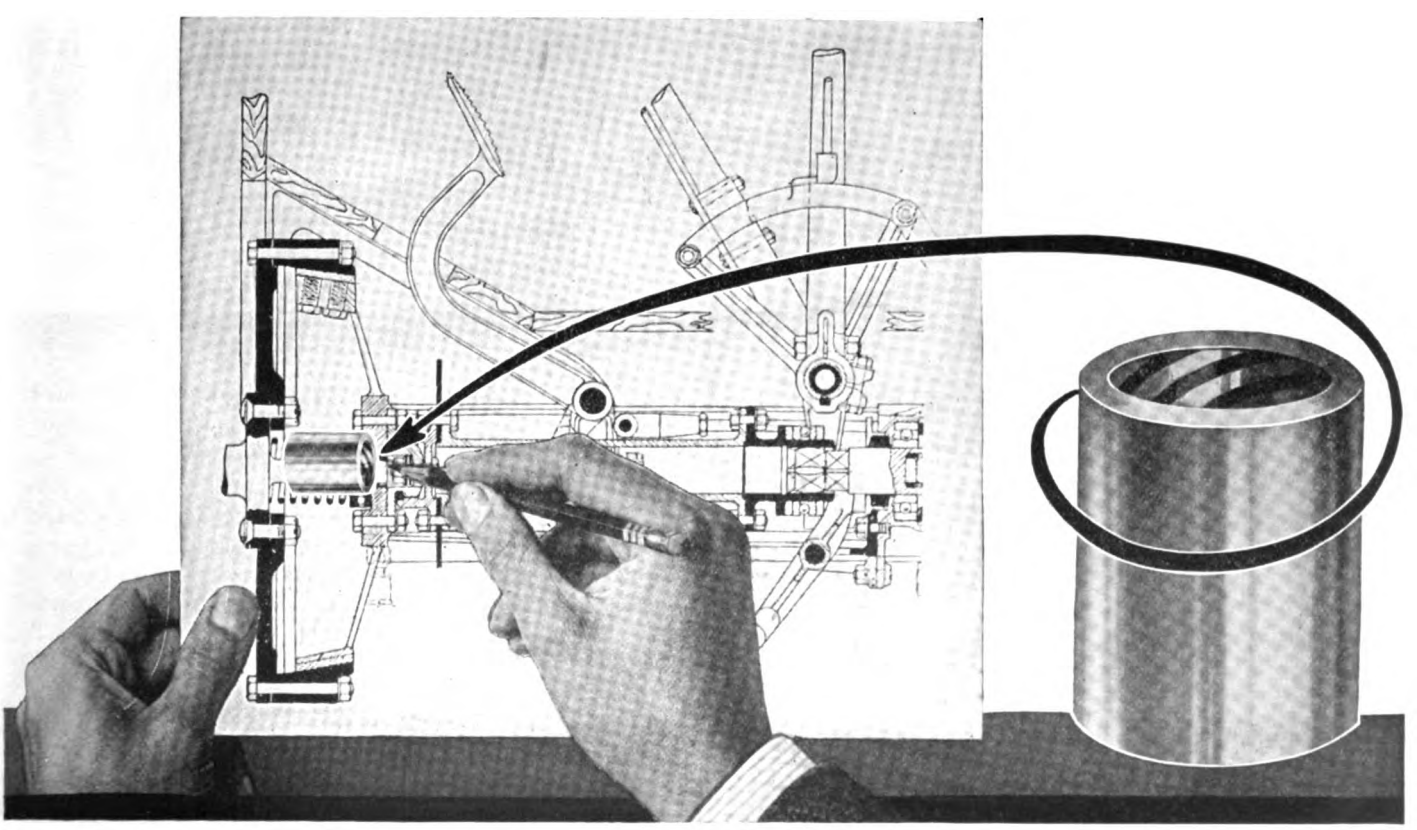
"We tested a number of these bearings for many months in very hard service, before we decided to adopt them. Nothing in the world would prompt us to change from the bearing we originally used to your self-lubricating bearing except service."

"These bushings are proving entirely satisfactory to us. I really do not know of any occasion where we have had trouble with the bearings. You know how many cars we have put out with your graphited bushings used at this point." (This company has used over a quarter of a million of this type of bushing.)

BOUND BROOK

TRADE MARK REG. U. S. PATENT OFFICE

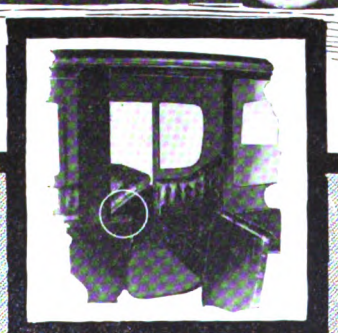
Oil-less Bushings



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Make Money





Note extra wide upper door section. The pane is of flexible material —it slides up into the top.

Winter is the season when the thoughtful motorist takes pains to keep his car in A No. 1 shape. It's your opportunity, Mr. Dealer, to impress upon him the sterling dependability of the Detroit Detachable Weatherproof Top. Promote economy by showing how the touring car can be made to answer as well as a limousine. Car owners are going to hang onto their old cars for another season. Hundreds of them will want to dress up their old cars—make them presentable and comfortable.

DETROIT WEATHERPROOF
PONTIAC

Ford Touring 1917 . $87.50
Overland Model 83, Five-passenger $115.00
Buick D-45, Light Six $140.00
Chalmers 6-30, Five-passenger (including rain vision visor to be fitted to standard windshield) $140.00
Chandler 1917-1918 (including three-piece built-in windshield) . . $185.00
Hudson Super-Six Touring (including three-piece built-in windshield) $190.00

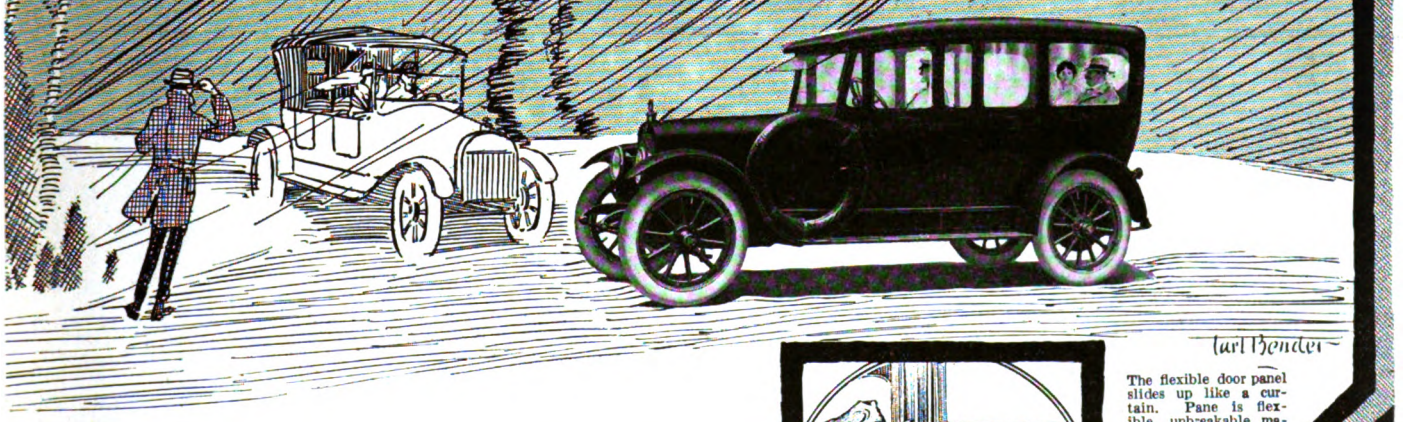
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This Winter

CASH IN *ON THE BIG DEMAND*

DETROIT

DETACHABLE WEATHERPROOF TOP





The flexible door panel slides up like a curtain. Pane is flexible, unbreakable material—clear as the best glass.

There's only one *Top at the Top.* It is made of tough, durable, absolutely weatherproof material in sizes for a variety of cars. The doors have no glass. They are wide and flexible. They slide up into the top for fair weather driving—pulled down the car is warm, comfortable, snow-proof, rain-proof, cold-proof. It can be lighted with a dome light for the long winter evenings.

Don't delay getting in your winter orders. Inquiries already on hand convince us that there's a lot of business ahead. Find out about the *"Top at the Top."* *Clip the Coupon.*

BODY COMPANY
MICHIGAN

COUPON

Detroit Weatherproof Body Co.,
101 Saginaw Street, Pontiac, Mich.

Gentlemen:—
Please send me full particulars relative to dealers' proposition for the Top at the Top.

Name .....

Address .....

Business .....

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HESS-BRIGHT

SEND FOR THIS NEW LITERATURE

HESS-BRIGHT BALL BEARINGS

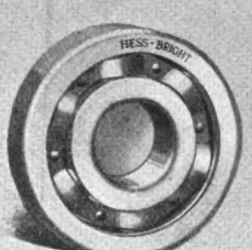
HOW TO APPLY THEM

HESS-BRIGHT MANUFACTURING CO.
PHILADELPHIA, PA.

The Application of Ball Bearings to the Airplane

THE HESS-BRIGHT MANUFACTURING CO.
PHILADELPHIA, PA.

THE CARE OF BALL BEARINGS



HESS-BRIGHT
MONARCH BALL BEARING

THE HESS-BRIGHT MANUFACTURING COMPANY
PHILADELPHIA, PA.
MANUFACTURERS OF THE "BETTER BEARING"

THE HESS-BRIGHT MFG. CO.
FRONT ST. AND ERIE AVE.
PHILADELPHIA, PA.

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SUNDERMAN
Vacuum Carburetor

$6

F. O. B. Newburgh

$8 and $10 for other than Ford or Mets

This is the KEY to your Winter Business

It is also the Solution of the Industry's Problem

Every car owner in the United States must save gasoline—or stop running his car all or part of the time.

If motorists do *not* economize, you will see rations of gasoline being distributed, and restrictions being placed on the use of passenger cars during the remainder of the war.

Rouse Yourselves, Dealers! You Must WORK in *Self*-Defense!

If the passenger cars stop running, SO DO YOU.

They will, unless their owners save gasoline.

Their owners can save gasoline if you help them.

You Can Help this Way:

1. Write us at once, sending a sample order for the Sunderman Carburetor. 2. Install it on a demonstrating car (we don't care what make or model). 3. Set down on a card, and place it in your window, the mileage you have been securing from this car. 4. Tell your customers through window and counter cards and your newspaper advertising that you are going to find out how much the Sunderman Carburetor can increase the car's mileage. Tell them when, where and how you are going to make this demonstration. 5. Print the results—you will find a gasoline saving of from 30 to 50%—with a great increase of power, speed, pick-up and flexibility. 6. Get ready for the big demand for Sunderman Carburetors that will follow—a wire to us will bring immediate delivery.

That's the way to do your bit—your duty by your country, by your industry, by your **cash register.**

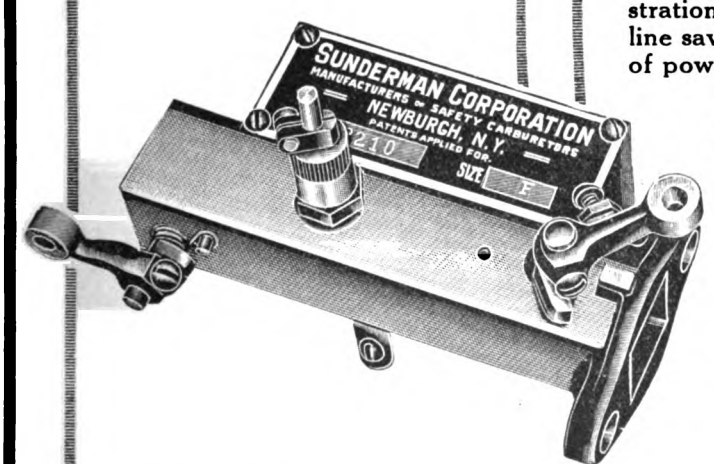
Get busy at once! We'll help every way we can!

Our proposition is yours for a postal—a letter, or a WIRE!

Help Your Customers to Save

That's your duty, Mr. Dealer. Every car owner wants to save—you must show them how. The SUNDERMAN CARBURETOR will save for them without sacrificing anything.

Start NOW



Sunderman Corporation

9 Chambers Street Newburgh, N. Y.

Western Office: 403 Kresge Building, Detroit

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STEGEMAN Six Cylinder TRUCKS

Electric Lighted
Electric Started

Big concern or little, we can fit a STEGEMAN, or if necessary a fleet of STEGEMANS, to your special trucking needs.

Of the STEGEMAN five capacities—2-, 3-, 4-, 5- and 7-ton—one model is certain to bring your ton-mile cost down to a figure that shows a gratifying haulage profit.

Catalog, prices, specifications and detailed information mailed on request.

Some excellent opportunities open for dealers of proper qualifications. Write.

STEGEMAN MOTOR CAR COMPANY
604-26 LINUS STREET MILWAUKEE, WIS.



When writing advertisers please mention Motor World—It identifies you

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Winter Driving Keeps Business Thriving

Back up the big movement for winter business. More cars than ever will be run this winter. The demand for accessories and repair work will exceed that of any previous season.

Owners are deeply interested right now in questions of power and economical operation. How to meet the Government's appeal for conservation of fuel and oil. How to overcome the difficult driving conditions imposed by winter roads and winter weather.

Realize what a direct and immediate answer you have to both questions in

McQUAY-NORRIS LEAK-PROOF PISTON RINGS

Make your customers see how they can cut down the cost of running their cars and get increased power at the same time with a set of these piston rings. Nothing to equal them for tuning-up weak, wasteful motors—for giving such all-round dependable, efficient and durable service.

IMMEDIATE SERVICE ON ANY SIZE RING

McQuay-Norris LEAK-PROOF Piston Rings are immediately obtainable in any size or over-size—any width or diameter—for any make or model of motor. Over 300 jobbing and supply houses carry complete service stocks and can fill your order at once for all standard sizes and over-sizes. At the factory over 2000 different sizes are kept constantly in stock ready for immediate shipment.

No other piston ring manufacturer gives such complete and prompt service. It saves delay, satisfies the owner and impresses him with your live methods of doing business.

Send for FREE Booklet

"To Have and To Hold Power. It will tell you all about the genuine McQuay-Norris LEAK-PROOF Piston Ring. Will save you and your customers a good deal of money, time and trouble. Write Dept. K.

TRADE MARK REGISTERED
LEAK-PROOF
PATENTED

Manufactured by

McQuay-Norris Manufacturing Co., St. Louis, U.S.A.

Branch Offices:

New York Seattle San Francisco Philadelphia
Pittsburgh Chicago Kansas City Los Angeles
St. Paul Atlanta Dallas

Canadian Factory:

W. H. Banfield & Sons, Ltd., 372 Pape Ave., Toronto

Digitized by Google

Get New Business and— HOLD IT

A good tire creates a demand for ITSELF.

During the hot months of burning road and constant use, every tire you sell is a stepping stone to either your success or failure.

You cannot afford to take a chance on a tire of uncertain mileage.

If every tire customer you make does not bring you at least 3 additional customers—your efforts are useless.

THIS WINTER

Heavy enclosed bodies will take the place of light summer bodies. The added weight on tires will put your tires to the test.

Spring or summer; fall or winter—DELION TIRES to be worthy of their reputation *must* deliver *6000* miles to *your* customers.

It Can Be Done!

By giving *absolute* tire satisfaction to your customers this winter, you pave the way for a rousing summer business—*you get it*—and *HOLD IT.*

It is Being DONE!!

DELION dealers everywhere build enviable reputations. They sell *Delion Tires* with the definite assurance of the *expenseless,* profitable *REPEAT SALE.*

EVERY DAY!!!

New Delion Dealers help to further the fame of a product which in its appearance is as instantly confidence-inspiring as its long continued use proves it worthy.

Use Your Best Judgment— Write Us

DELION TIRES

DELION TERRITORIAL DISTRIBUTORS

Boston, Mass., The Howard Potter Co.
Buffalo, N. Y., The Main Garage
Central Falls, R. I., Coutu Bros.
Charleston, S. C., Miller Auto Livery Co.
Cincinnati, O., The Brendamour Sporting Goods Co.
Cleveland, O., The Banner Tire & Supply Co.
Frenchtown, N. J., J. G. Simanton
Hartford, Conn., The Warren Watson Co.
Indianapolis, Ind., American Tire Distributing Co.
Jersey City, N. J., The Tire Service & Supply Co.
Louisville, Ky., The Henry Heick Hardware Co.
Morristown, N. J., Delion Tire Co.
Newark, N. J., The Hudson Tire Co.
Petersburg, Va., The Stockdell-Meyers Hardware Co.
Philadelphia, Pa., Delion Tire & Rubber Co., Inc.
Pittsburg, Pa., Kaiser Bros.
St. Louis, Mo., The Straus Saddlery Co.
Shreveport, La., The Wheless-Wilson Co.
Trenton, N. J., Crescent Auto Supply Co.
Utica, N. Y., The Yellow Taxi Service Co.
Waco, Tex., The Waco Rubber Co.

Delion Tire & Rubber Co., Inc., 1922 Broadway, New York City, U. S. A.

FACTORY: TRENTON, N. J.



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SINGER
Auto Traffic Signal

"The Signal Success"

Here is a traffic signal that does away with the uncertain, careless and inadequate hand signalling. It substitutes a safe, sure, unmistakable signal that is dignified and refined, and easier to operate than the signal by hand.

Easy to Install—Easy to Sell

The Singer Signal can be installed easily and quickly by any good mechanic. It will fit on any car. Easy to sell because there is a real need for a satisfactory signal.

We predict that the Singer Signal will duplicate the history of the self starter. Before the first starters were built everybody cranked his own car, because there was no other way. It was only a short while until cars without starters were obsolete. Now that there is a better way than hand signalling, the motoring public won't be satisfied with any car which isn't equipped with a Singer Signal.

In time we believe city ordinances will require some such signal, just as they now require horn signals. Already the Singer Signal has been endorsed by the traffic authorities in every city where it has been shown.

Big Opportunity for Dealers and Garage Men

The Singer Signal can be put on any car. A car owner can indulge his desire for one without waiting for the new cars to come equipped with them. Here is a ready to supply business for live dealers and garage men. There is a good profit for the dealer in each Singer Signal.

Remember—the cream is at the top and is the first to be removed. Don't wait, but investigate at once.

General Distributers Wanted The Singer Signal is manufactured by men of national standing in the automobile business. We want men or firms of like responsibility to act as general representatives or distributers. Exclusive territory for supplying jobbers and retailers will be granted to the right party in each territory. Apply at once.

Singer Auto Traffic Signal Co.
2830 Locust St., St. Louis, Mo.

Instantly signals your intention to oncoming and following traffic

Press button on dial without removing hand from steering wheel. Your movements — to RIGHT—LEFT—STOP—BACK—are instantly flashed from both front and rear of your car. "AHEAD" Signal constantly displayed except when displaced by another signal. STOP Signal (in red) automatically controlled by foot brake. Impossible to STOP or slow up without warning those behind you.

Clearly readable 100 feet away, day and night. Illuminated at night. Traffic officers don't mistake Singer Signals. Pilot light flashes on when signal is displayed—proof that signal is operating.

The Singer Signal is housed in two handsome enameled cases (7 x 6 in.). One front, one rear. An ornament to any car—adds to its appearance and greatly increases the safety and pleasure of driving. An absolute necessity on closed cars, all the time, and on every car at night. Ladies especially appreciate the Singer Signal—as a refined and ladylike method of signalling.

The Singer Signal is no experiment. It has been rigidly tested for 3 years, and has proven dependable, durable and necessary. Operated from car battery without appreciable use of current.

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COLUMBIA

TRUCKS AND TRAILERS

haul in year-round profits for Dealers



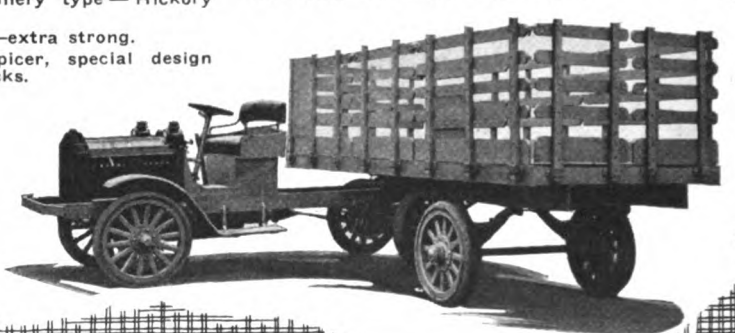
STANDARD 2 TON CHASSIS
Price $1950.00 F. O. B. PONTIAC

Winter months are profit months for Truck and Trailer Dealers. Sell the tried and true Columbia Truck and Trailer.

Columbia Vehicles are reliable—built to stand up—satisfy—no frills—no experiments—just quality and durability. Columbia "The Truck that Serves."

SPECIFICATIONS

Motor—Continental—Red Seal—40 Hp.—L. Head Type.
Rear Axles—Russell—Internal Gear.
Transmission—Covert—selective sliding 3 speeds forward and reverse.
Bearings—Timken Roller.
Radiator—Long Mfg. Co.—Tubular.
Front Axle—Schuler.
Wheels—Hayes—Artillery type — Hickory Spokes.
Springs—Perfection—extra strong.
Universal Joints—Spicer, special design for Columbia Trucks.
Magneto—Eisemann—high tension.
Governor—Pierce—set to 15 miles an hour (sealed).
Steering Gear—"Worm" and Worm Wheel type, 18" wheel ball thrust bearings.
Tires—36" x 4" front—36" x 6" rear.
Wheelbase—114"—134"—144"—164".



COLUMBIA MOTOR TRUCK & TRAILER CO.

PONTIAC, MICHIGAN

Sales Assistance, Co-operation Promp Deliveries

My organization is a happy family, because Columbia methods are personal man to man methods. I work with our dealers in every possible way—that makes every last one of them feel that he's part of the organization. It's easy to help a fellow when we can call each other by our first names—why shouldn't we? We're all in the same family and we're growing up and prospering together. Sign the coupon and let's talk it over.

Leigh Lynch
Sales Mgr.

Mr. Leigh Lynch, Sales Mgr.,
Columbia Motor Truck & Trailer Co., Columbia Blvd., Pontiac, Michigan.

Dear Sir: Kindly forward full information relative to "Columbia" sales plan. I am interested in securing sales rights in the.....

..... state of

.....

Name .....

Address .....

When writing advertisers please mention Motor World—It identifies you

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Get this display rack for fan belting-free



HERE'S something every dealer needs—a convenient, attractive display rack for fan belting. Enables you to keep your stock in perfect condition and all together in one place—where you can get at it easily and quickly. Saves floor space. Adds to the attractiveness of your store. Made of wood, handsomely finished and surmounted by beautiful steel sign, lithographed in brilliant colors, which will attract attention to your stock and help make sales.

Rack furnished free to dealers with a fast-selling assortment of HLB fan belting—fan belting that has back of it almost fifty years of successful belt-making experience—fan belting that's used and endorsed by a majority of leading pleasure car and truck manufacturers.

All HLB fan belting (round, "V" or flat) is now packed so it can be displayed in this convenient new rack. Thus it will sell even better than ever before—and yield you quicker profits.

The attached coupon will bring you full details of this desirable rack and our attractive proposition to dealers—together with the name of jobber nearest you. Sign and mail it—*now*.

Hide, Leather & Belting Company

227 D-S. Meridian Street, Indianapolis

FLAT, ROUND *and* "V" *Fan Belting,* LEATHERTEX *Cone Clutch Facings,* RAWHIDE CUT LACING, LEATHER STRAPS, *Etc., Etc.*

HLB

Write

Hide, Leather & Belting Co., Indianapolis

Please tell me more about your new display rack for fan belting, together with details of your attractive proposition to dealers.

Name .....

Address .....

.....

M. W. 10-10-17

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There's No Danger

in "overhauling" with WEAVER AUTO TWIN-JACKS





WEAVER Garage Equipment

Write for Complete Catalog

The Broad Wheel Base and Rugged Construction Insure Safety to the Man Under the Car

THE feeling of absolute security inspired by the broad, massive construction of the Weaver Auto Twin-Jack enables the machanic to work to the best possible advantage. There is no fear of the dismantled car falling upon him, and he is enabled to move the car at will to facilitate operations.

The dependable crank hoist has no ratchets to be accidentally "tripped" or to jar loose while transporting the load. Every part is properly machined and fitted to insure the maximum of strength and durability.

Always in Service

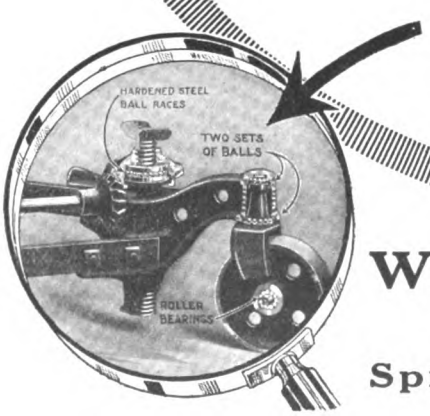
Every phase of the handling of automobiles demands Weaver Auto Twin-Jacks:—Unloading cars from freight cars—placing them in position on the sample floor—getting out the "buried" car in the garage—placing in closer formation to economize floor space in the storage room—handling dismantled cars in the repair shop—facilitating operations in the wash room and paint shop.

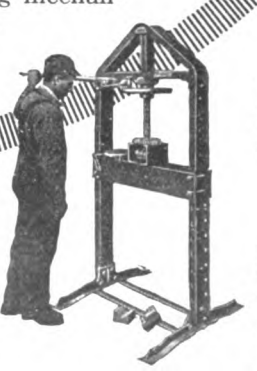
A few turns of the crank handle raises one entire end of the car and supports it firmly and securely upon the large ball and roller bearing casters. With one of these Jacks under each axle, the car can be turned completely around within its own length, pushed sideways, or manipulated upon the floor in any other desired manner. One man can handle the heaviest pleasure cars with ease.

WEAVER Auto Twin-Jacks are scientifically constructed and designed by SPECIALISTS who manufacture nothing but Garage Equipment. *** Built in two sizes, to meet all requirements. *** Will fit either axle of the car.

Ball and Roller Bearings Throughout

High grade ball and roller bearings relieve the friction in the casters and lifting mechanism. Excessively heavy loads can be handled with extreme ease.







Weaver Auto Ambulance

Will handle your "tow in" jobs safely, quickly and economically. Will fit either axle.

Weaver 20-Ton Press

Discard the sledge hammer and do your work in a mechanical manner. This press will soon save its cost, besides increasing your patronage.

Weaver Mfg. Co.

2165-79 South Ninth St.

Springfield, Illinois

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A Complete Line

NO matter what his customer may want, the Stearns dealer is equipped to sell him.

If it is a four-cylinder or an eight-cylinder car—he can offer quiet and competent performance in a degree that the average car cannot equal.

If it is a seven-passenger touring car or a four-passenger roadster, the Stearns dealer can point to outer beauty and inner finish that is unusual.

Then there is the additional advantage of a line of Stearns Closed Cars that will compare favorably, in coach-work and appointment details, with the best custom-made bodies.

The Stearns dealer is always ready to supply the demand of the changing seasons.

For he has a complete line of open and closed cars suited for any kind of weather.

And back of this complete line of open and closed cars is—the wonderful Stearns reputation for goodness.

In territories where we are not now represented, we will be glad to hear from men of integrity and financial responsibility.

Stearns Four *five-passenger* **$1785**

Touring Car for Seven $1925; Four Passenger Roadster, $1785; Coupe, $2300; Convertible Sedan, $2385; Limousine, $3200; Landaulet, $3300; Landaulet Brougham, $3350; Limousine Brougham, $3300.

Stearns Eight

Touring Car for Seven, $2575; Four Passenger Roadster, $2575; Coupe, $3200; Coupe-Landaulet, $3200; Limousine, $3875; Landaulet, $3985; Landaulet Brougham, $3985; Limousine Brougham, $3875.

THE F. B. STEARNS COMPANY, CLEVELAND, OHIO

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Announcement Extraordinary!

At Last—A Curtain Fastener That Won't Tear Out

CINCH

CURTAIN FASTENER

CHURCH PATENTS PENDING

THE EASIEST OPERATED — NON-TEARING — NON-RUSTING FASTENER KNOWN



THE despairing cry of top-makers, motor-car and carriage manufacturers and also the public, has been for a simple curtain fastener that *can be depended upon.*

Others have experimented, but the **CINCH** is a certainty—it fills every requirement.

CINCH won't tear fabrics—operates easily—has positive lock catch—is scientifically constructed—durable—can be attached in any position—saves time and money—nobby in appearance.

We are now sending out samples and price lists. Why not send us your name? It's a "Cinch" you'll never regret it!

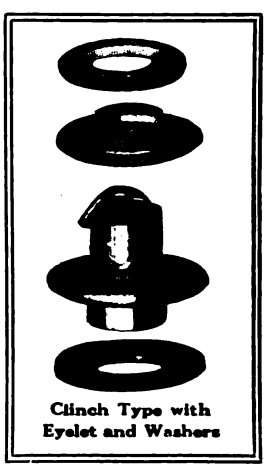
EXCLUSIVE AGENTS

·L·C·CHASE & CO· BOSTON

NEW YORK DETROIT CHICAGO

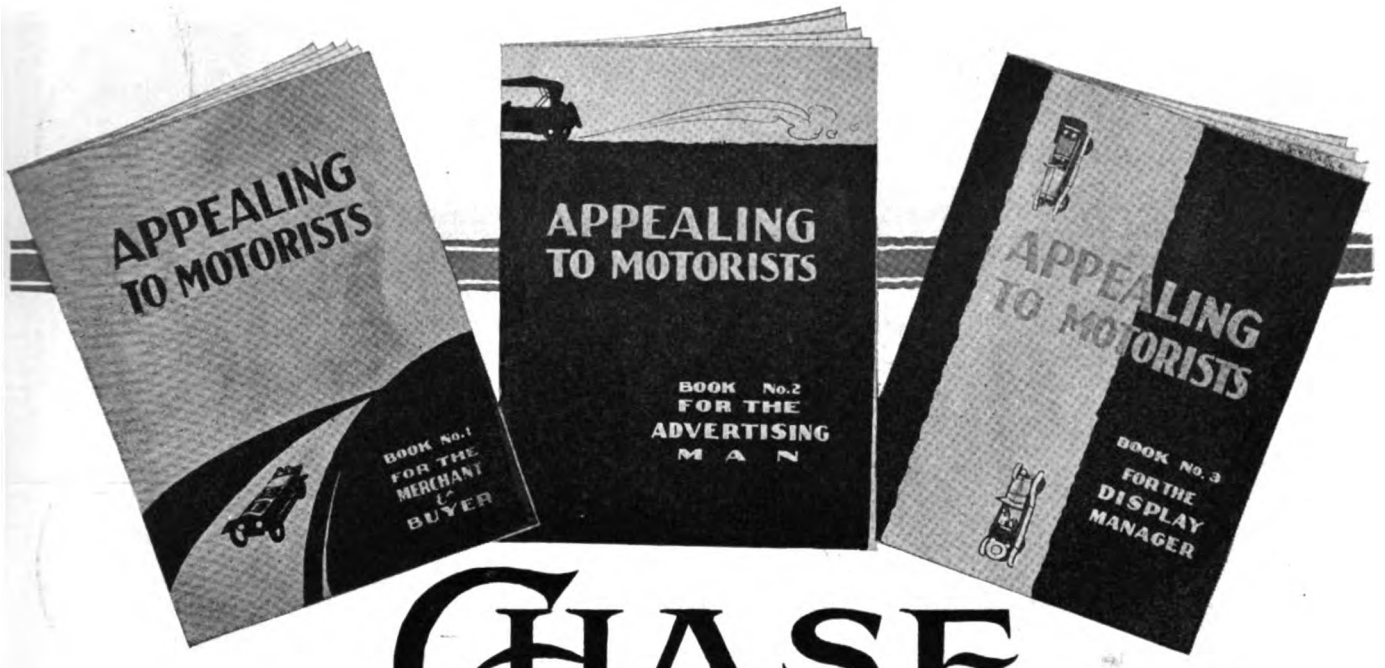
Leaders in Manufacturing Since 1347

Operation: A one-hand movement—grasp curtain—push on catch, and raise curtain with same hand.



Clinch Type with Eyelet and Washers

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CHASE SERVICE PROGRAM

Offers you a plan whereby you can sell more motor-car accessories, apparel and robes. In three to-the-point booklets (pictured above) new ideas in window-displays, forceful arguments on selling, etc., are effectively presented, and the booklets contain quantities of suggestions for starting a Motor Goods Department in your store, or bettering the one you already have.

The series of merchandising manuals are:

(a) for the Merchant and Buyer

(b) for the Advertising Manager

(c) for the Display Manager

Thus—the Chase Service Program gears up every spark of Selling power in Originality—Quality—Value —Advertising—Window Display—Store Arrangement

To whom in your store ought we to send these booklets?—a postal from you is all that is needed.



L·C·CHASE & CO.

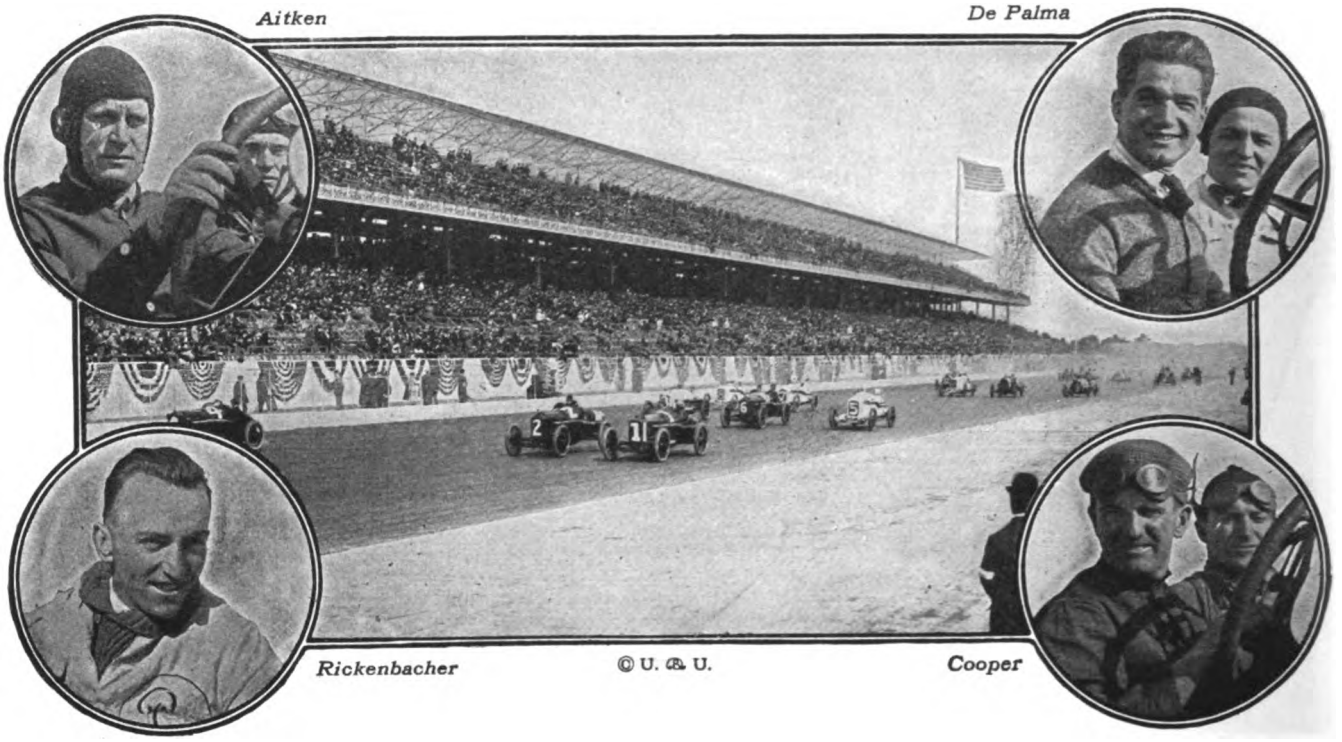
BOSTON

NEW YORK CHICAGO

Leaders in Manufacturing Since 1847

Look for the Tag

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Why racing drivers use Thermoid Brake Lining

Racing drivers must be absolutely sure of their brake lining. Their lives depend on it.

That is why leading drivers—De Palma, Cooper, Aitken, and Rickenbacher endorse Thermoid Brake Lining.

They *know* it won't grab or slip.

These cars and trucks use Thermoid Brake Lining—

CARS		TRUCKS	
Pierce-Arrow	*Hudson*	*Service*	*Autocar*
Studebaker	*Cadillac*	*Atlas*	*Howe-Ford*
Chalmers	*Pathfinder*	*Denmo*	*Buckeye-Tractor*
Peerless	*Rauch & Lang*	*Moreland*	
Marmon	*Sun*	*Lippard-Stewart*	
Apperson	*Moon*	*Superior*	
Premier	*Pilot*	*Bessemer*	
Auburn	*Empire*	*Gersix*	
Haynes	*Davids*	*Republic*	
Kissel	*National*	*Fulton*	
White	*Kline*	*Columbia*	
Metz	*Stephens*	*Denby*	
Cole	*Paterson*	*Bethlehem*	
King	*Lexington Howard*	*Union*	
Briscoe		*Hudford*	
		Wichita	
		Ames	
		Sayers	

These axles use Thermoid Brake Lining—

Timken-Detroit	*Peru*	*Torbensen*	*Empire*	*Celfor*
Columbia	*Sheldon*	*Russel*	*Hess*	*American*

Why don't you specify the brake lining these experts specify—Thermoid?

Thermoid Rubber Company TRENTON, N. J.

Branches: New York, Chicago, San Francisco, Indianapolis, Detroit, Los Angeles, Philadelphia, Pittsburgh, Boston, London, Paris



Makers of "Thermoid Tires" and "Thermoid Garden Hose"

Digitized by Google





Hard Service Tells

Tungstens are being used exclusively in these giant motors of Chicago Bus Company big motor bus fleet. Tungstens will stand up under unusual service conditions where ordinary plugs fall down.

Spark plugs that successfully withstand the terrific fire of these high-power motors will serve indefinitely in the motors of ordinary trucks and passenger cars.

Tungsten Manufacturing Co.
Marshalltown, Iowa

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HAYNES

"America's First Car"

The 1918 Haynes All-Season Sedans, Town Cars and Coupes are Going Fast!



This page announcement to the car-buying public appears in two colors on October 27th in the Saturday Evening Post. Other prominent publications, including Colliers Weekly, Country Gentleman, Literary Digest, Cosmopolitan, etc., will carry the news.

TWO weeks ago in these pages we notified the trade concerning the Haynes offerings in closed and convertible closed carriages for the 1918 season.

Although our production plans call for a generous output, even at this early date present and new dealers have ordered a considerable portion of the total number to be built. Many deliveries have already been made.

Some dealers have viewed the coaches. Others have on'y seen photographs and read descriptions. In both cases the responses have been even greater than anticipated.

As previously advised we have planned to accommodate a limited number of new dealers. We cannot hold open this added inducement very long, it appears.

So if you are considering the Haynes Line and wish to be in position to supply the new and beautiful 1918 Haynes all-season sedans, or the town cars and coupes, we recommend prompt action. Be ready, when the big national announcements appear!

We suggest that you write or wire today

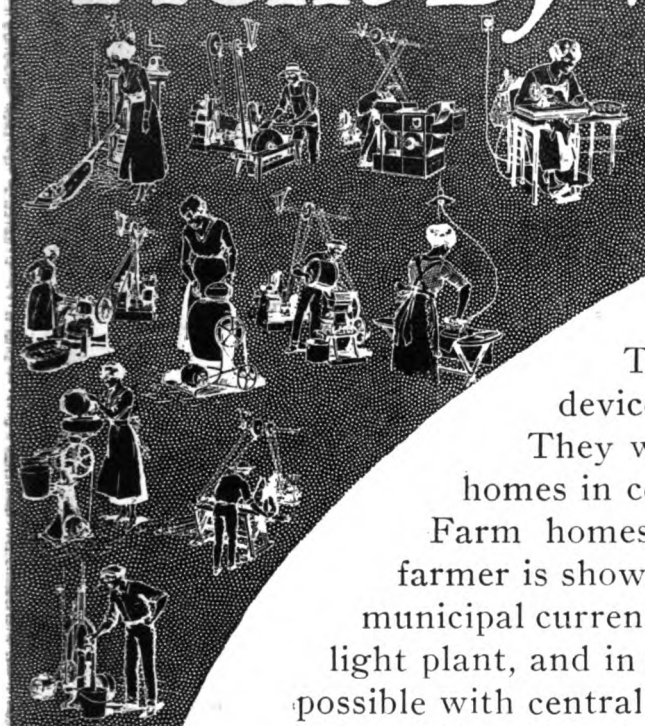
THE HAYNES AUTOMOBILE COMPANY

70 S. Main St., Kokomo, Ind., U. S. A.

Haynes "Light Sixes" and Haynes "Light Twelves" are also to be had in 7-passenger Open Cars and 4-passenger Roadsters. Haynes "Light Sixes" are also supplied in 5-passenger Open Cars. Prices, illustrations and descriptions on request.

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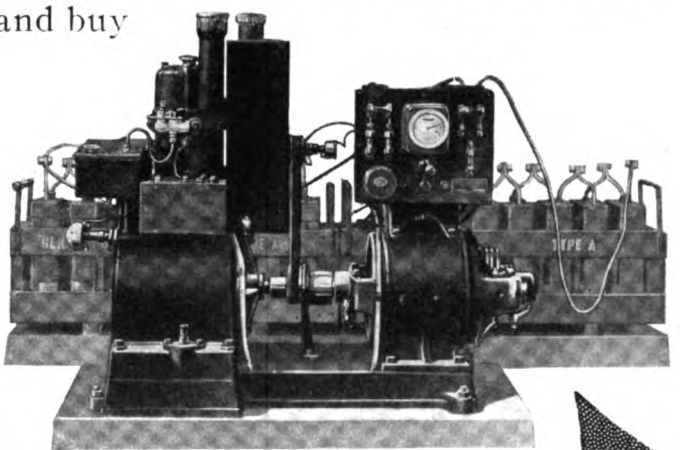
Profit By What Farmers Want NOW



Farm homes want the advantages afforded by lights which glow on pressing a button. They want to be spared the labor electrical devices will save in home tasks and daily chores. They want their homes to be on a par with city homes in convenience, modernness.

Farm homes everywhere want electricity—once the farmer is shown how he can have all the conveniences of municipal current in his home with an individual power and light plant, and in addition have many other advantages not possible with central station current, there is only one answer—he will buy the plant and buy it quickly.

Genco Light



The Genco Light in its present form is the result of eight years' work and study in the construction of individual power and light plants. It is designed solely to fit the needs of the farm. It possesses so many distinct advantages over ordinary plants that it will leap into popularity, dominate the field, have a quick sale in all sections immediately it is announced.

Our advertising is now in preparation. We will soon announce the Genco Light in the sectional and national farm papers. To care for our business and close sales we must have representatives in every part of the country.

We need live wires everywhere, need a man in your section. If you are the man we should have in your locality, we want to hear from you. Write us for particulars. Use the coupon.

General Gas Electric Company
Hanover, Penna.

General Gas Electric Co.
Hanover, Penna.

Please send me full details regarding Genco Light and your proposition for Dealers in.....

.....territory

Name .....

WRITE ADDRESS IN MARGIN

Digitized by Google

FAIR LIST PRICES

FAIR TREATMENT

GOODRICH TRADE MARK TIRES

Have This Sign Selling for You

Where You See This Sign Goodrich Tires are Stocked

THE GOODRICH DEALER'S SIGN is a friendly face which halts the automobilist in the need of a tire at your door.

It is an OUTSIDE salesman that sells a customer *before* he enters your store.

For every tire user knows that wherever he sees a *Goodrich Dealer Sign* THERE he finds a *Goodrich square dealer* selling the best tires made at the Fair Prices of the Fair List.

He knows that *behind* that sign stands GOODRICH FAIR TREATMENT ready to make good to him anything the tire he buys *may* not.

Furthermore, the tremendous pulling power of *Goodrich's 1917 advertising campaign* which sows the land *thick* with the *sales* of *Goodrich Tires* is in each Goodrich Dealer Sign.

The great national magazines and weeklies, the metropolitan dailies and your own home town papers are ALL SELLING for you—WHEN YOU HAVE A GOODRICH DEALER'S SIGN OVER YOUR DOOR.

GOODRICH

SILVERTOWN CORD TIRES SAFETY TREAD FABRIC

Goodrich Brown Tubes and Gray Tubes

The B. F. GOODRICH RUBBER CO. Akron, Ohio

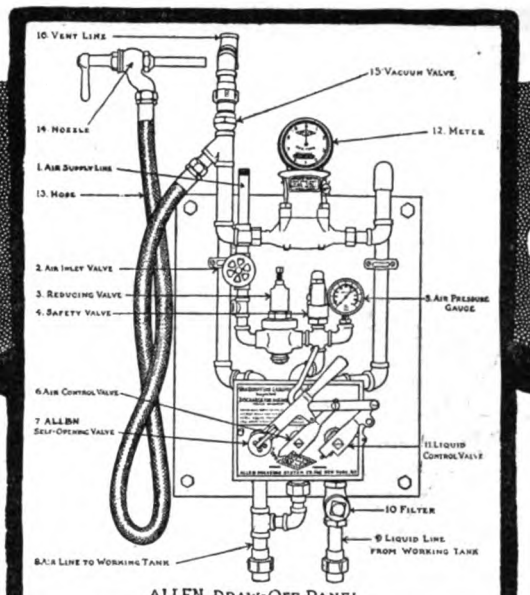
BEST IN THE LONG RUN

When writing advertisers please mention Motor World—It identifies you

Digitized by Google

THE SAME ALLEN
ALLEN
WHO MAKES THE TIRE CASE

needed in every garage



ALLEN DRAW-OFF PANEL

Sell your Gasolene or Oil thru the ALLEN System

Protection for buyer and seller

You can sell gasolene by air pressure. The Allen System has the emphatic endorsement and approval of the National Fire Underwriters.

This System for storing and distributing gasolene, oil or any other volatile liquid is so constructed as to eliminate the possibility of ignition or explosion. Lowest possible fire insurance rates are assured.

The ALLEN System is in actual operation in many garages and mercantile establishments where it is giving perfect satisfaction.

The special ALLEN meter tells at a glance the amount of liquid drawn off. Speedily and easily operated.

The System is adapted to varying conditions of height without in any manner affecting the accuracy or safety.

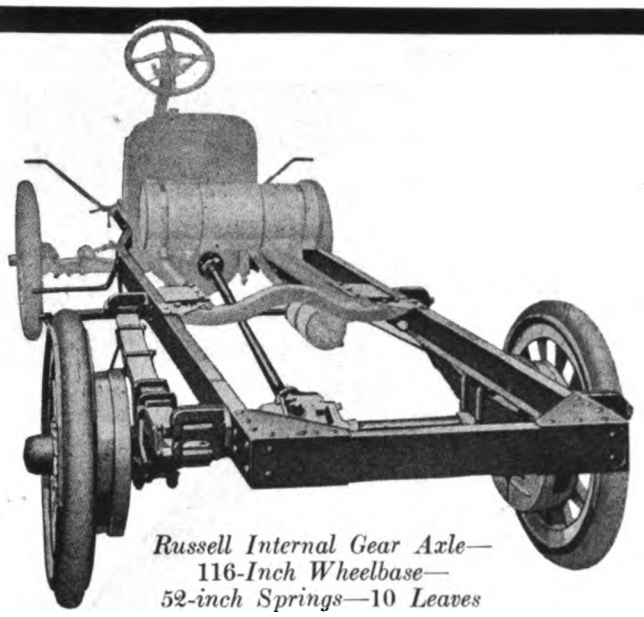
A most practical installation for any up-to-date garage or service station.

Descriptive literature on request

THE ALLEN PRESSURE SYSTEM CO. Inc.
22 W. 61ST. ST. NEW YORK

THE SAME ALLEN
ALLEN
WHO MAKES THE TIRE CASE

Digitized by Google



Russell Internal Gear Axle—
116-Inch Wheelbase—
52-inch Springs—10 Leaves

OVER 500 IN USE
Every Outfit Giving Perfect Satisfaction

We have been manufacturing the I-O-W-A Commercial Chassis for Fords for the last 2½ years.

We have always been able to dispose of every chassis built.

We are the sole makers of TWO models of chassis for Fords—a 1-ton model at $390 and a 2-ton model at $490, f. o. b. factory.

Over 500 outfits are in use today—every one showing a neat return on the buyers' investment.

We have never tried to see how many chassis we could build. We have been more interested in quality than in quantity production. Not how many, but how well, has guided us.

By holding every chassis up to high manufacturing standards—by utilizing shaft drive with internal gear axle, instead of chains and sprockets—by applying with intelligence the experience gained in truck manufacture—we are saving I-O-W-A Chassis Users materially in the item of operating expense—and we are helping I-O-W-A dealers make money. Catalog containing full specifications and complete information sent on request.

DEALERS: We are now appointing a limited number of new dealers in unoccupied territory. Prompt action is advisable, as our 1918 output is almost entirely contracted for. Wire, write or call on us at the factory.

IOWA MOTOR TRUCK CO.
Dept. M.W.
OTTUMWA, IOWA

Iowa

COMMERCIAL CHASSIS

Two Models

Convert Any FORD Into a 1 or 2-Ton Truck



Send for *FREE* Catalog

An IOWA-Equipped Ford Ready for Business

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BOYCE MOTO METER



Probably you will be interested to know that we are showing a very heavy increase in volume on Boyce Moto-Meters this year, as compared with last. It doesn't take many words to tell why.

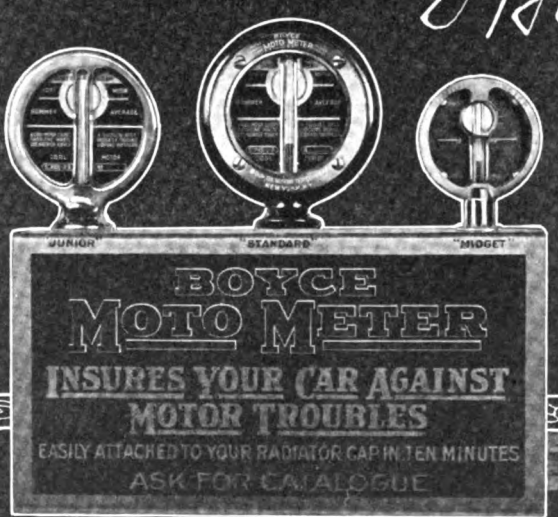
By the car owner, Boyce Moto-Meters are now recognized as the tell-tale signal of approaching distress "under the hood," and are a real actual necessity, popularly and fairly priced to the consumer. As an artistic radiator ornament, they are in a class by themselves.

To the car distributor and accessory dealer, it should particularly appeal as an item to be carried in stock, for they can recommend or guarantee it to give satisfaction, knowing there will be no "COME-BACK." The big national advertising campaign creates the demand and the dealer is assured of a handsome profit by your selling scheme.

In short, while it was a good seller in 1916, we predict that it will be the best seller in 1917.

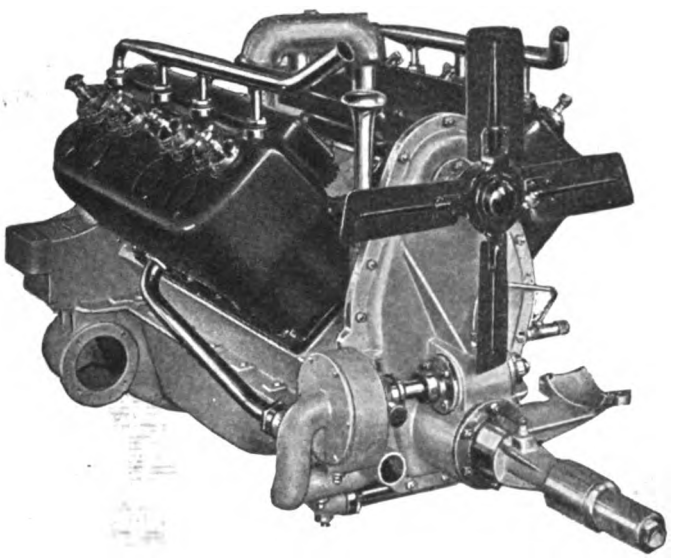
CHANSLOR & LYON COMPANY

C. H. Lyon



Digitized by Google

SPILLMAN



The Spillman "8"

has brought the 8-cylinder reputation up to its present high standard of excellence. It has added Easy Accessibility and an unequalled Lubrication System, while preserving all that smoothness, flexibility and power which distinguishes the 8-cylinder motor.

The Spillman "6"

is remarkable for its simplicity and strength of construction, ease of handling, flexibility and freedom from "engine trouble."

The Spillman "4"

for speed, flexibility, and power to climb hills and pull through mud and sand, is unequalled by any other motor of its class.

DEALERS

Just consider the big selling advantages of being able to say that the car you sell has the best lubricated engine made—

—that it is absolutely free from engine trouble.

—that its engine parts are readily accessible.

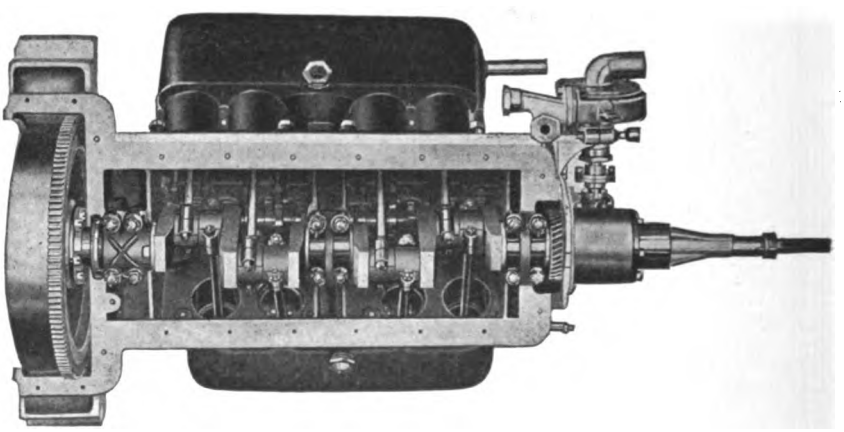
—that its cooling system is positively efficient at all speeds, water entering cylinders at lowest point and emerging directly over exhaust valves.

—that every engine part is balanced and finished to such nicety as to practically eliminate all necessity for solicitous care on the car owner's part.

All these and other advantages are present in the SPILLMAN Motor, and experienced motorists know it. In selecting your car for 1918, get a good engine. That is the thing that keeps sales steady, even in a dull market.

Herschell-Spillman Co.

North Tonawanda - - New York

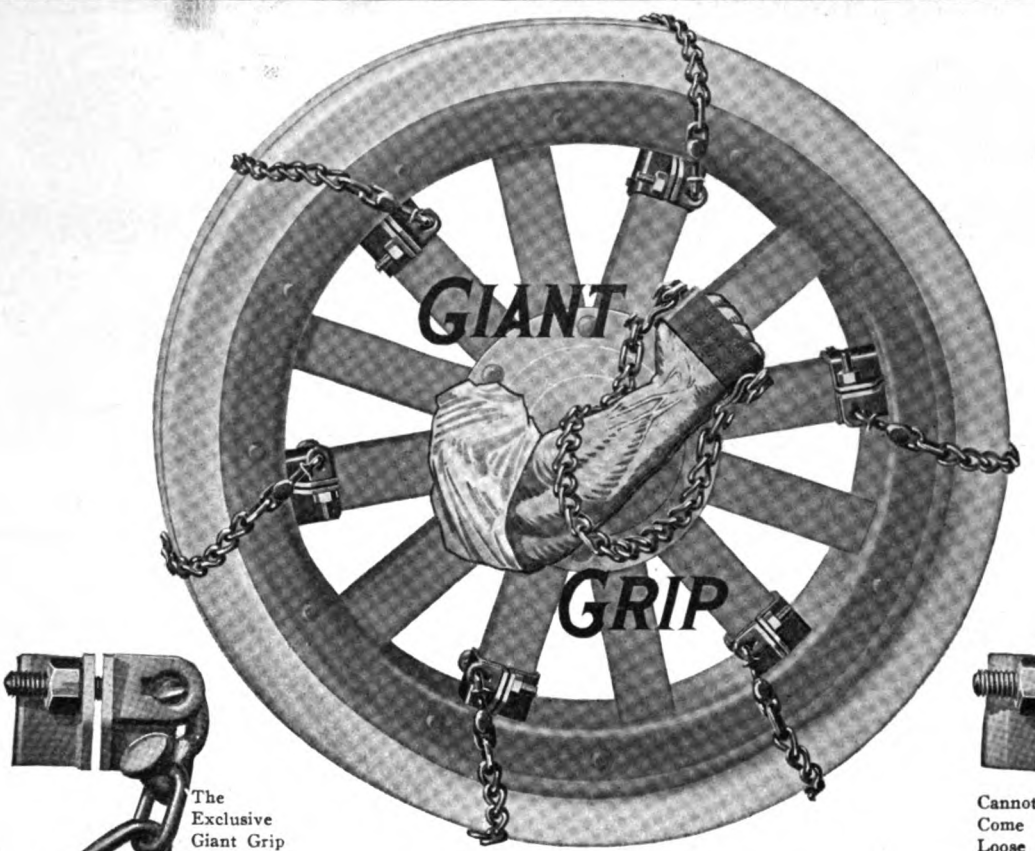


Fours 3¼ x 5

Sixes 4 x 5½

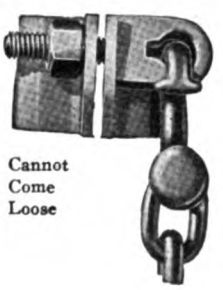
Eights 3¼ x 5

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The Exclusive Giant Grip



Cannot Come Loose

PATENTS APPLIED FOR

Giant Grip Non-Skid Chains

Are Now Ready for All Motor Trucks

The slippery, snowy season is almost here—the season when motor trucks slide away their efficiency, unless owners provide them with a non-skid set of chains, at once *easy to carry, quick to attach, simple to remove,* and *effective in action.*

GIANT GRIP Non-Skid Chains for motor trucks are quickly and easily attached ***with all*** *4 wheels on the ground.* No preliminary jacking up. No long chains to unravel. GIANT GRIP Non-Skid Chains go on when you need them, do their work with thorough precision, and come off when you are through with them, without the slightest inconvenience or unnecessary waste of time.

GIANT GRIP Non-Skid Chains establish a new standard, in material, construction and service. *Heat treated drop forgings* are used throughout. The clamps are lined with "Gripoid"—our special creosote prepared lining which *lasts as long as the steel itself.* Substantial hexagon nuts are used in fastening the clamps together, insuring absolute reliability. All hooks are attached to the *outside* of the clamps, for *convenience and speed.*

GIANT GRIP Cross Chains are attached to the clamps *without the use of any tools.* This is an exclusive GIANT GRIP feature. And on account of their construction *they cannot work loose.*

Write for free illustrated literature with complete details, showing method of attachment, and prices.

DEALERS ask for liberal discounts on the kind of winter necessity that sells.

CHALLONER COMPANY

PEARL ST., OSHKOSH, WISCONSIN **Established 1863**

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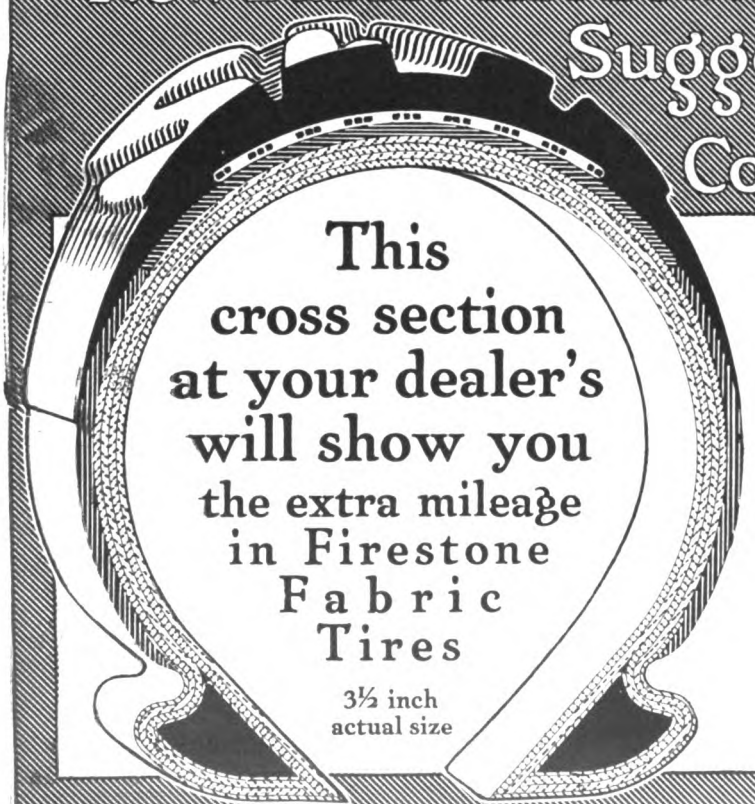
Actual Service Gives Leadership To Firestone SUPER CORD TIRES



THE leadership of the Firestone Super Cord has been won solely on construction producing unequaled strength, durability and flexible action. The body is built of walls of stout cord. Each cord imbedded in pure gum, no two cords ever touching to cause friction. The cushion (which is under tread to absorb shocks) is a thick layer of pure gum. The tread is tough and thick. The beads which hold the tire to the rim are specially reinforced. The side wall is also reinforced, giving extra strength against rim-cut, and raising bending point safely high. Users of Firestone Cord Tires are getting the highest average mileage enjoyed by car owners.

That motorists find extra values in Firestone Tires is proved by the fact that our sales increased 72 per cent this year up to September 1. Our total business this year will exceed $60,000,000.

New Fabric Tire Features Suggested By Cord Construction



This cross section at your dealer's will show you the extra mileage in Firestone Fabric Tires

3½ inch actual size

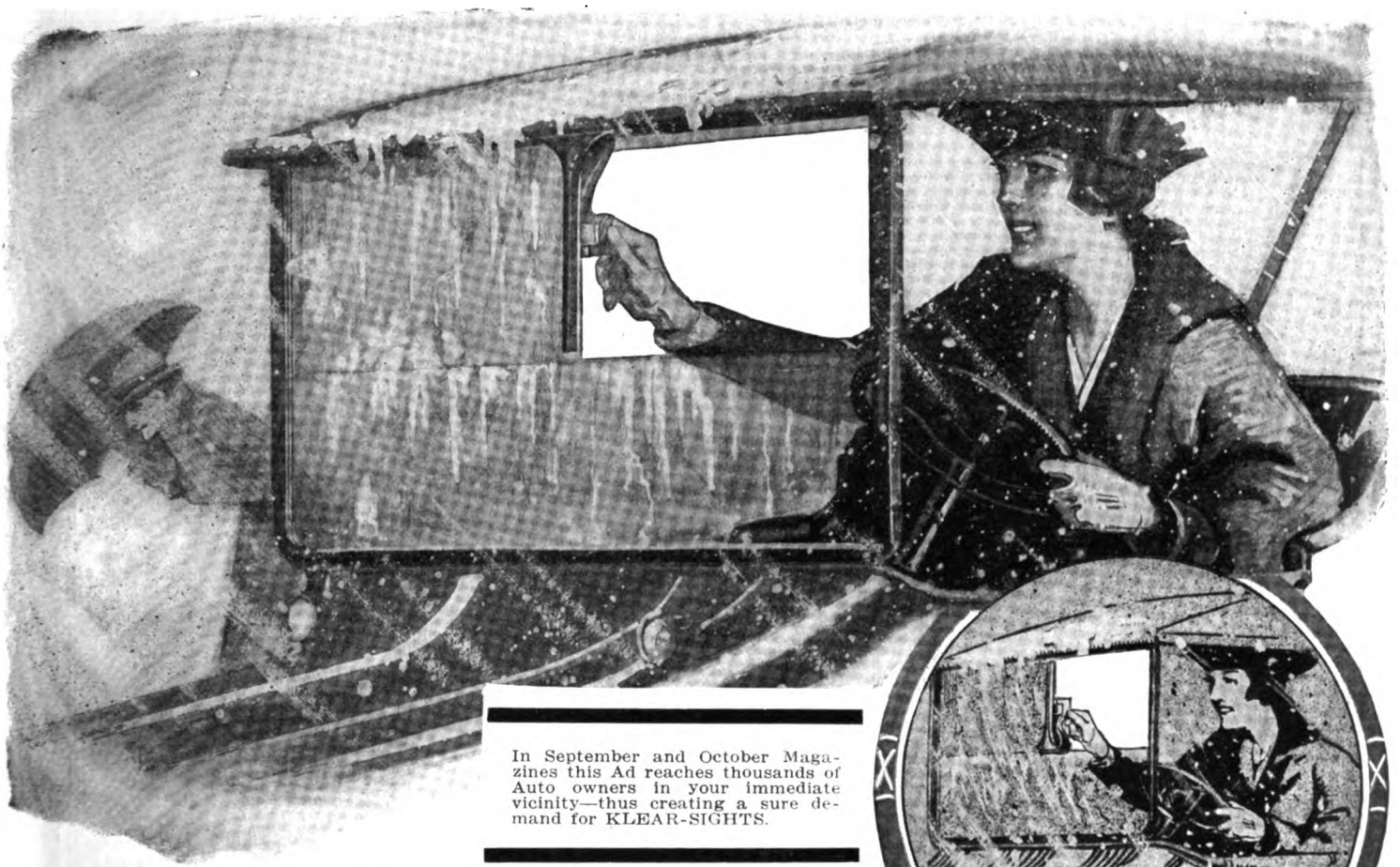
Firestone Fabric Tires

THICK, TOUGH TREAD gives longer surface wear. MORE RUBBER BETWEEN LAYERS. Added protection against internal friction, greater resiliency. THICK CUSHION STOCK. More resiliency, protection against tread separation and stone bruise. REINFORCEMENT IN SIDE WALL. Greater strength at bead. Firestone dealers will show you cross section of the newest output, with features that add more miles to Most Miles per Dollar.

FIRESTONE TIRE AND RUBBER CO.
Akron, Ohio Branches and Dealers Everywhere

Digitized by Google

Cash In On "Klear-Sight" Profits



In September and October Magazines this Ad reaches thousands of Auto owners in your immediate vicinity—thus creating a sure demand for KLEAR-SIGHTS.

No More Accidents Or Risky Driving In Stormy Weather



THE KLEAR-SIGHT KEEPS THE WINDSHIELD CLEAR

TRADE-MARK REG. U. S. PAT. OFFICE

Motorists can drive in the worst sort of weather if their cars are equipped with this most welcome of all automobile accessories. RAIN, MIST OR SNOW—goes off the Wind Shield in a jiffy. Just an easy motion across and you see ahead through crystal-clear glass—an **undimmed vision**—an **unblurred sight—a clean, clear Wind Shield.**



Actual size is 7½ inches high. Made of scientifically tempered cold drawn steel and equipped with an insert strip of pure wear-proof rubber.

—the accident preventive
—the boon to all motorists
—the chauffeur's best friend
—the long felt want fulfilled

Retails at $2.00

Write for special Distribution proposition for your territory.

THE U-AUTO-C CORP.

21 West 38th St., New York

Patentees and Exclusive Makers of the KLEAR-SIGHT Wind Shield Clearer

Dealer's Coupon

The U-AUTO-C Corp., Dept. D, 21 West 38th St., New York

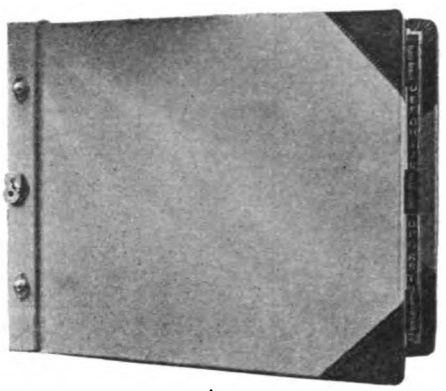
Send sample of KLEAR-SIGHT with Dealer's List Price and Discounts.

Name .....

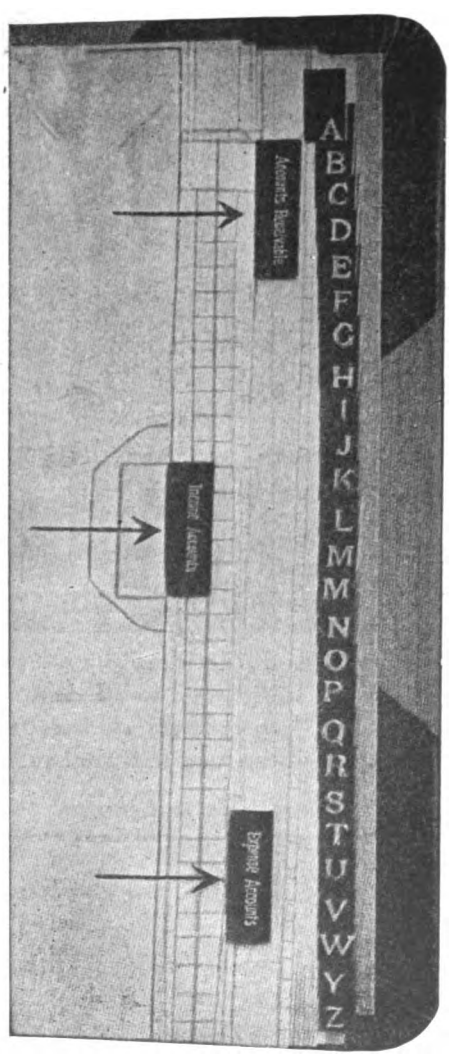
Town..... State.....

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Do You Know Just Where You Stand Financially?



THE ONLY BOOK needed in the System. Size 14½x11½ in. Picture below shows index division tabs under which entry forms are filed. Only three forms used. Quick, simple, easy to understand.



—are you making money or losing money?
—just how much are you ahead or behind?
—what part of your stock or shop is making and what part losing?

IF YOU CAN'T ANSWER THESE QUESTIONS right off the bat fill out coupon below and learn how to answer them quickly and exactly *at any time!*

EVERY LITTLE BIT HELPS IN THE WINTER! Losses and discrepancies that do not count for much in summer, when big profits are coming in, are drags on you during the lean winter months.

Motor World's Simplified System of Accounting

HERE IS THE CHEAPEST, SIMPLEST, AND SUREST METHOD of finding and stopping losses; of keeping your mind perfectly clear as to your financial status; of checking up purchases, sales, and stock on hand.

YOU CAN TURN LOSSES INTO PROFITS, if you know just why and where they occur.

YOU DON'T HAVE TO BE A BOOKKEEPER or a financial shark to learn or to follow this system. It is simple as A, B, C. A book containing all instructions accompanies it. You can start and run it yourself, or *any man* in your garage or shop can do it.

SENT ON 5-DAY APPROVAL. Get it, look it over, and if you are not satisfied with it, send it back and your money will be refunded.

DON'T LET ANOTHER DAY PASS WITHOUT IT. You can get the whole thing for $15, and it will save you that much in the first month you use it.

OVER 1500 GARAGE, REPAIR, AND SUPPLY MEN ARE USING IT NOW—with splendid results.

TALLMAN, ROBBINS & CO.

Exclusive authorized manufacturers of Motor World Simplified System of Accounting

314 W. SUPERIOR ST., CHICAGO

New York, 320 Broadway

TALLMAN, ROBBINS & CO.
314 West Superior St., Chicago

Dear Sirs:

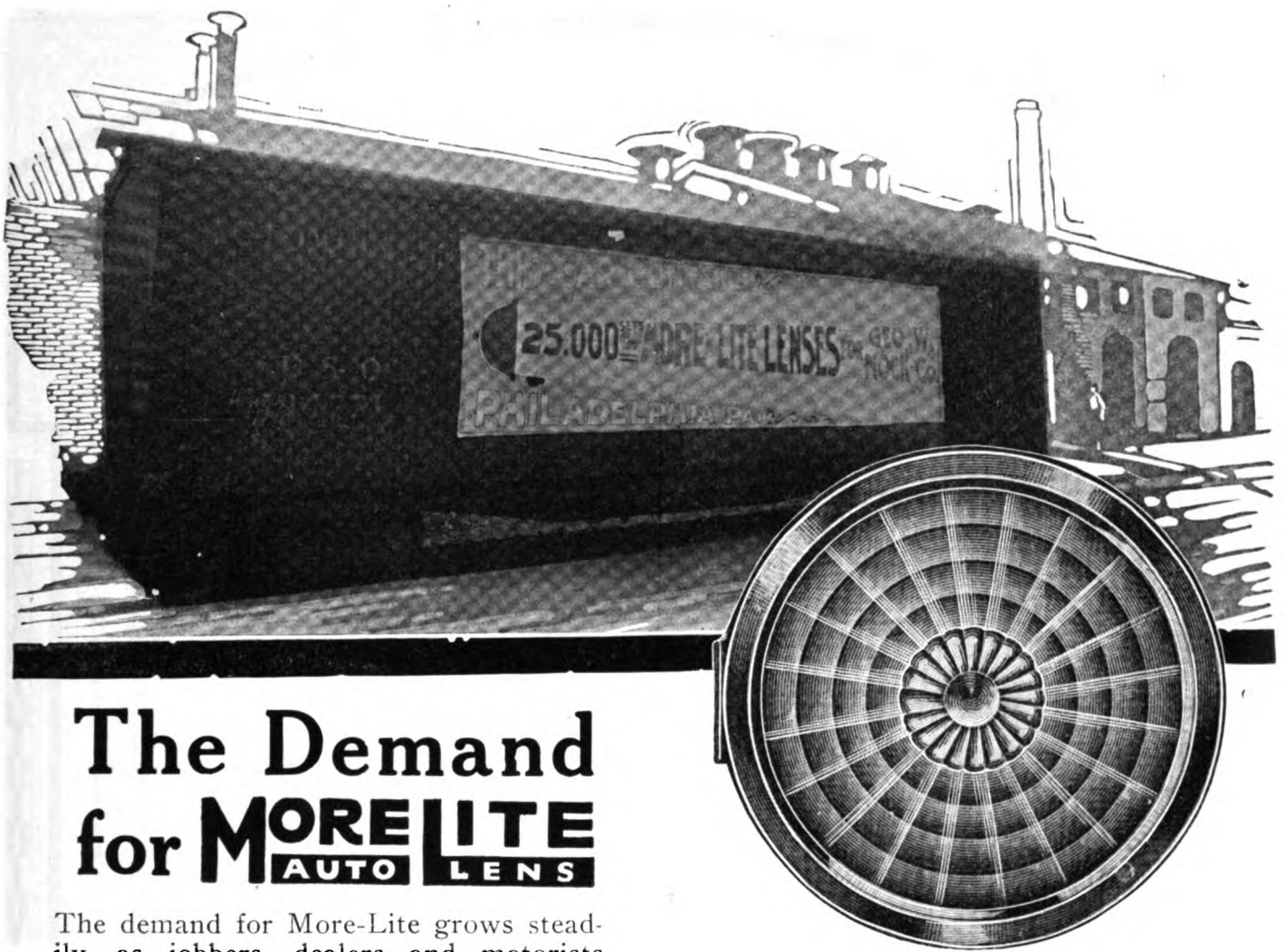
Ship me complete "Motor World Simplified System of Accounting" with Book of Instructions. I enclose $15, in full payment with understanding the same will be refunded if I am not satisfied and return the System within 5 days.

Name .....

Street and Number.....

City and State.....

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The Demand for MORE-LITE AUTO LENS

The demand for More-Lite grows steadily—as jobbers, dealers and motorists come to realize the fact that **More-Lite Auto Lenses equal and frequently surpass the higher priced lenses** they have been buying in the past.

This photo of a carload of 25,000 sets of More-Lite Lenses recently shipped to a prominent Philadelphia dealer shows how our business has been developing.

More-Lite Auto Lenses equal high priced lenses in their effective diffusion of light without loss of intensity.

They equal them in handsome appearance. They give an equally attractive finish to your car.

They comply with headlight laws of all states and add new pleasure, and a new measure of safety to night driving. They are one-piece glass lenses, durable and easily cleaned. **Made in both crystal and amber glass.**

They come in all sizes and are easy to install. Read over these prices.

6" to 8½" dia. crystal, $1.50 per pair; Amber glass, $2.00 per pair.
8⅝" to 9½" dia. crystal, $1.75 per pair; Amber glass, $2.25 per pair.
9⅝" to 10¼" dia. crystal, $2.00 per pair; Amber glass, $2.50 per pair.
10½" to 11¼" dia. crystal, $2.25 per pair; Amber glass, $3.00 per pair.

L. E. SMITH GLASS CO.,
Mt. Pleasant, Pa.

—100% Efficiency—50% Cost—

MORE-LITE AUTO LENS

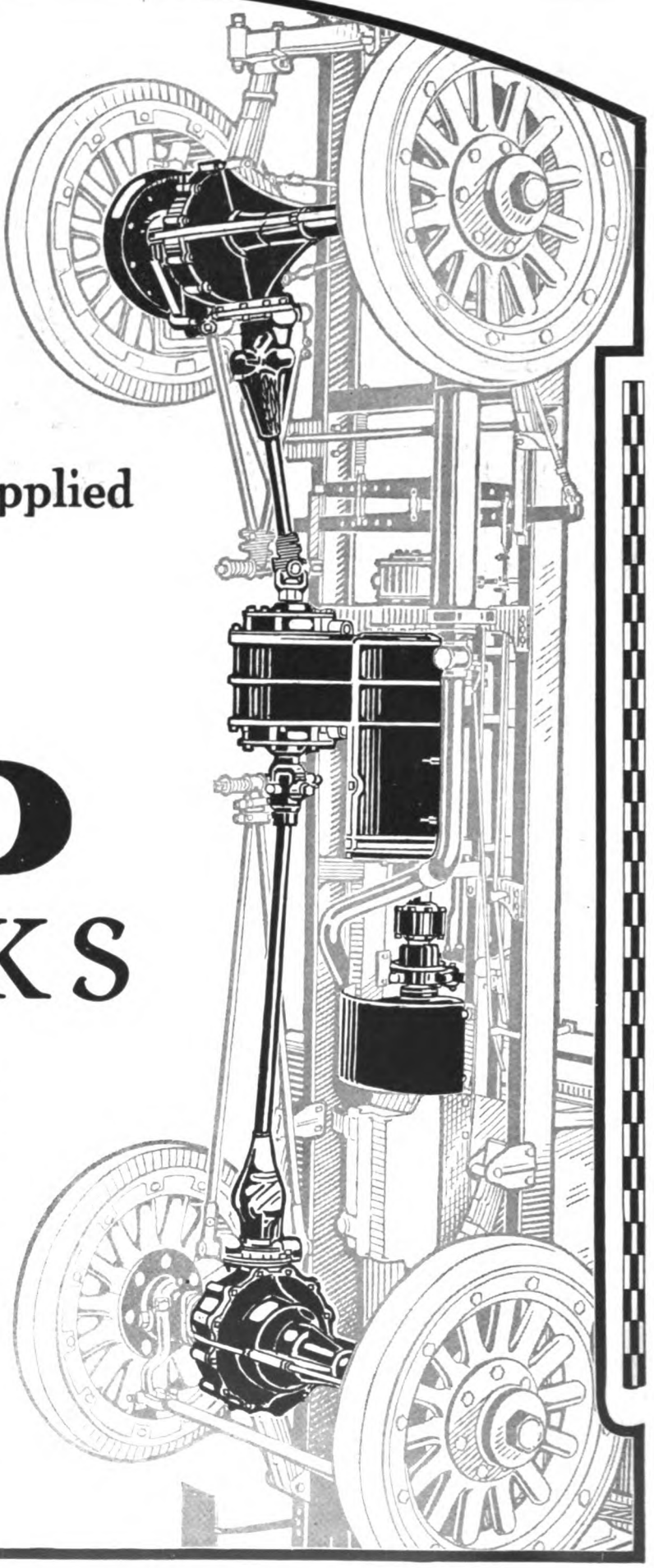
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The Four Wheel Drive Principle

as Exclusively Applied in

F W D

TRUCKS



Power to All Four Wheels in the Proper Proportion

THE Center Differential in F-W-D Trucks distributes the power as power is needed to front and rear axles.

This is an exclusive application of the Four Wheel Drive principle which adds greatly to the dependability and economy of the truck.

Actual performance has demonstrated the all-round efficiency of F-W-D Trucks to the extent that today the Four Wheel Drive Auto Company, of Clintonville, is the largest manufacturer of Four Wheel Drive Trucks in the world.

The new catalog explains why this construction gives greatest dependability, economy and the ability to overcome road conditions hitherto considered impossible. Sent free upon request.

Four Wheel Drive Auto Company
Department P **Clintonville, Wisconsin**

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Peerless

TWO POWER RANGE
Eight

Seven Passenger Touring
$2090
Until October fifteenth

Prices until Oct. 15, 1917

Touring	$2090	*Coupe*	$2750
Roadster	$2090	*Sedan*	$2890
Sporting Roadster	$2250	*Limousine*	$3590

Prices After Oct. 15, 1917

Touring	$2340	*Coupe*	$2850
Roadster	$2340	*Sedan*	$2990
Sporting Roadster	$2490	*Limousine*	$3690

All prices f. o. b. Cleveland
—subject to change without notice

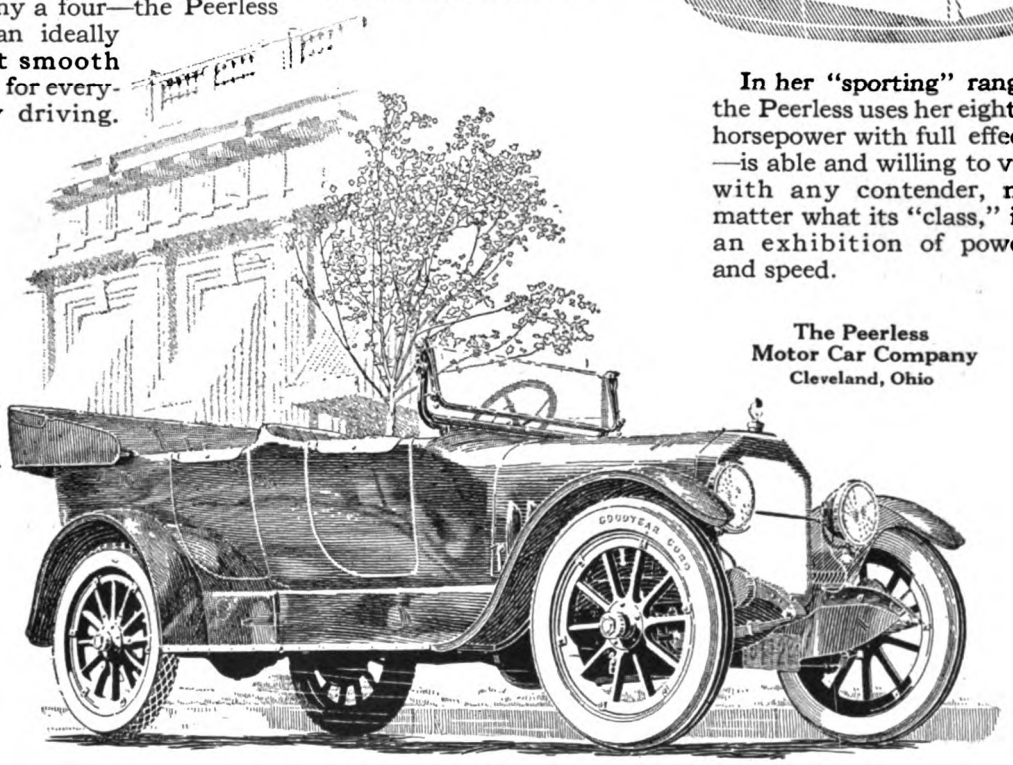


The Peerless Dealer's Big Advantage

The performance which characterizes its "sporting" range begins where other ideally soft smooth cars balk at the steepness of the long upgrade or deliver their last spurt of speed.

The contrast in performance in these two separate and distinct power ranges has a new thrill for any driver who has not experienced it.

On half rations—consuming fuel so sparingly as to put to shame many a lesser powered six, even many a four—the Peerless is an ideally **soft smooth car** for every-**day** driving.



In her "sporting" range the Peerless uses her eighty horsepower with full effect —is able and willing to vie with any contender, no matter what its "class," in an exhibition of power and speed.

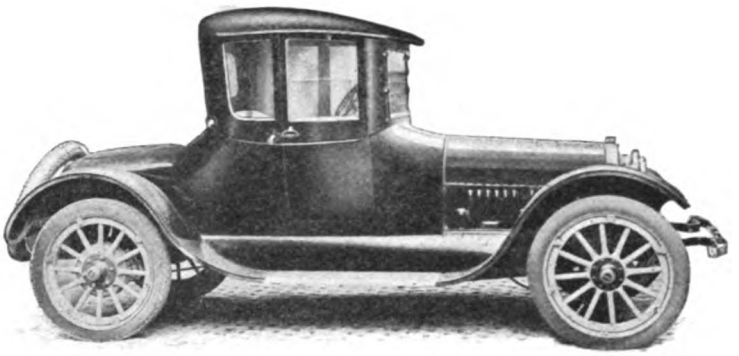
The Peerless Motor Car Company
Cleveland, Ohio

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Overland
B—4 & 6
Model 85 and Country Club Model 90

Buick
D 34, D 35
D 44, D 45
and New E 45

Oakland
32, 34 and 50



Photograph Shows the Buick Runabout Model D-44 Equipped with an Anchor Glass-Enclosed Top

$65 to $165

According to car model F. O. B. Cincinnati

Beautifully finished. Strong, Light, Durable. No Overhang. No Squeak or Rattle. Comes Ready, Complete. Anyone Can Put On Easily and Quickly.

Sedan Anchor Top Coupé Glass-Enclosed

Order Your Winter Top "Rush"

The rush season is on for high class winter tops.

Demand exceeds the supply. Order at once and get yours. Avoid disappointment.

Almost everywhere this season we have so far been able to keep our promises to Dealers and Owners in prompt shipments.

Now comes the test.

Carloads after carloads are going out to New York City, Chicago, and other big centers where Anchor Tops are so popular and in such demand.

If you want yours sent *express* to get it quicker, wire or write direct to the factory, to be delivered through your dealer.

Safe delivery guaranteed, satisfaction or "no sale." We accept $25 deposit. Be sure to tell the name of your car and model number.



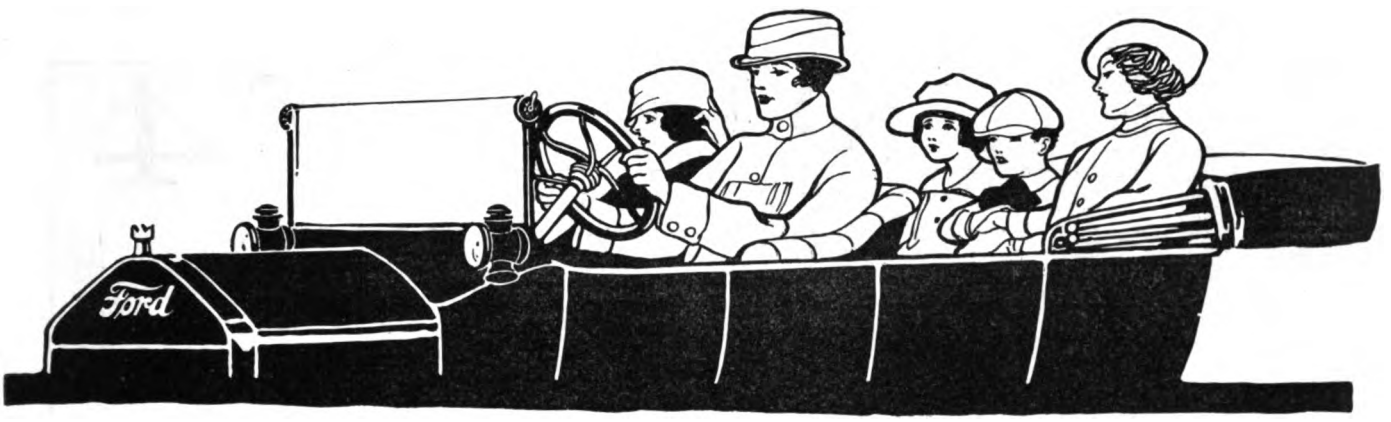
The Anchor Top & Body Co.

Factory Established 30 Years

7427 South Street CINCINNATI, O.

Photograph Shows the Buick Touring Car With an Anchor Glass-Enclosed Top. Get Yours for Buick, Overland or Oakland.

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No Cranking—Just Riding!

Motoring loses its lure when a woman has to perform the hard labor of cranking.

Where the powerful, invisible, obedient sinews of electricity attend to the cranking, the joys of motoring are multiplied and driving becomes all pleasure.

Electric-cranking of Ford cars attains its highest perfection in the new, but already famous,

A-B-C
STARTING & LIGHTING SYSTEM FOR FORD CARS
TWO UNIT SIX VOLT

Experienced Ford dealers no longer experiment with incompetent Ford starters. They concede, and thousands of A.B.C. owners concede, that this greatest of all Ford accessories conforms more closely to Ford engineering and construction than any other starter in the field.

All over the world, in all weathers and all climates, the A.B.C. starts any Ford and lights any road at pressure of button.

Simple, compact, easiest to install, longest lived. Puts Ford starting in the same class with the highest priced cars.

Weight evenly distributed on both sides of engine by units. No drag or strain on motor from starting or generating. Noiseless in operation. A fibre, leather, and metal belt, moving in a V-type pulley, gives the highest pulling contact. Guaranteed efficient and mechanically correct.

Ford dealers, who have not yet brought to their customers the overwhelming advantages of the A.B.C., should at once fill out and mail the attached coupon, and learn the terms of our generous, 1917-1918 dealer proposition. Once an A.B.C. dealer, always one.

A. B. C. Starter Co., Detroit, Mich.

A. B. C. Starter Co.
Dept. A, Detroit, Mich.

Gentlemen: Please send me complete information about your 1917-1918 proposition to dealers. I understand that this places me under no obligation.

Name .....

Address .....

.....

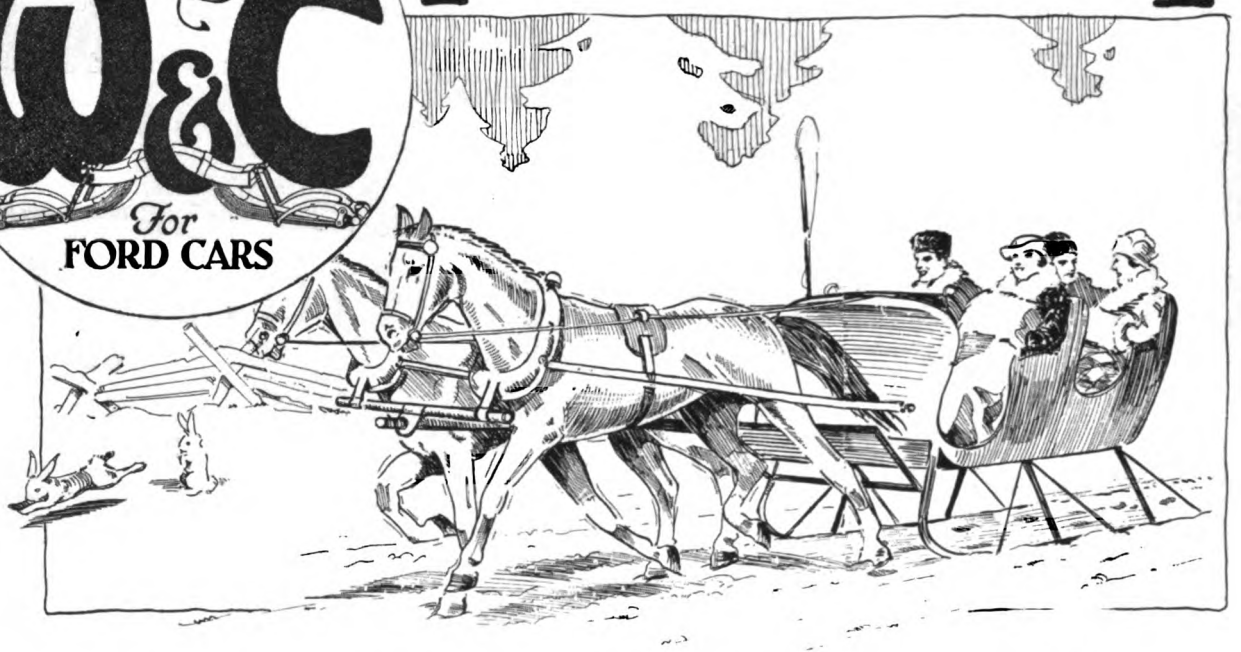
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The Original Double Arm SHOCK ABSORBER

W & C

For FORD CARS

$10 Per Set of 4



The Easy Riding of the Old-Fashioned Sleigh is Duplicated Over Rough Winter Roads by Any Ford Car *W. & C.* Equipped.

No matter how rough the wagon road used to be in winter, the good old-fashioned sleigh always slid along smooth and easy—as the W & C equipped Ford glides today over snow-covered pavements and pikes.

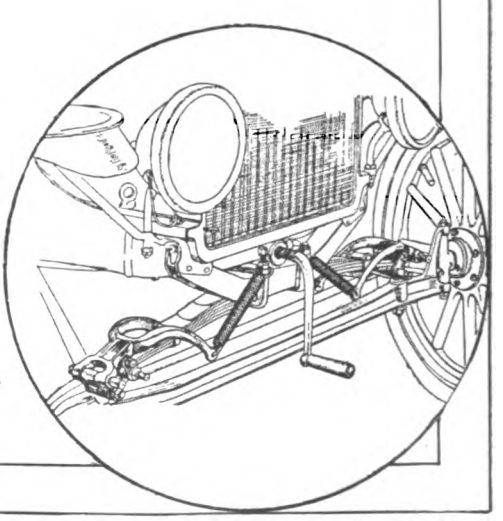
The roughest motoring of the year comes in winter, when snow and dirt encrust the surface of even the best highways science can devise—

Unless dealers, taking advantage of necessity, and profiting by the exhilaration of old-time sportsman's comfort, put sleigh-riding shock absorbers on every Ford car in sight.

A Winter Business Getter That Pays

—is W & C, **the original double arm shock absorber** for Fords. Finds its proper place on every passenger or commercial Ford, and turns back a profit that puts life into your winter accessory department.

W & C sells fast, all year. Its season never ends. ASK YOUR JOBBER'S SALESMEN NOW, for the W & C Winter Business that is rightfully yours.



P. H. WEBBER COMPANY

HOOPESTON, ILLINOIS

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Speaking of "Refinement"

THERE are proven possibilities of refinement in a thoroughly trustworthy passenger car. Each season, for a dozen years, has marked a further, richer refinement of the triumphant Dorris of 1905. The Dorris of today is a car that stirs your pride. A masterpiece.

Conspicuous for utmost beauty of body, in line and finish; for incomparable excellence in construction; for enormous power under quiet, yet positive, control; for luxury and comfort.

DORRIS

"Built up to a Standard, Not down to a Price"

Engined with the Original Dorris Perfected Valve-in-Head Motor, integral with the Dorris unique unit power plant—therefore economical. Long, easy-riding springs—therefore extremely comfortable. Built with skillful care—therefore dependable, stanch and strong. Rich trimmings and accessories that over-satisfy the critical.

Four-Passenger Four-Door Tourist	$2785
Seven-Passenger Touring Car	2785
Five-Passenger Sedan	3350
Seven-Passenger Limousine	4150
(All of the above on the improved Dorris I-C six-cylinder chassis.)	
Two-Ton Worm Drive Truck Chassis	2285

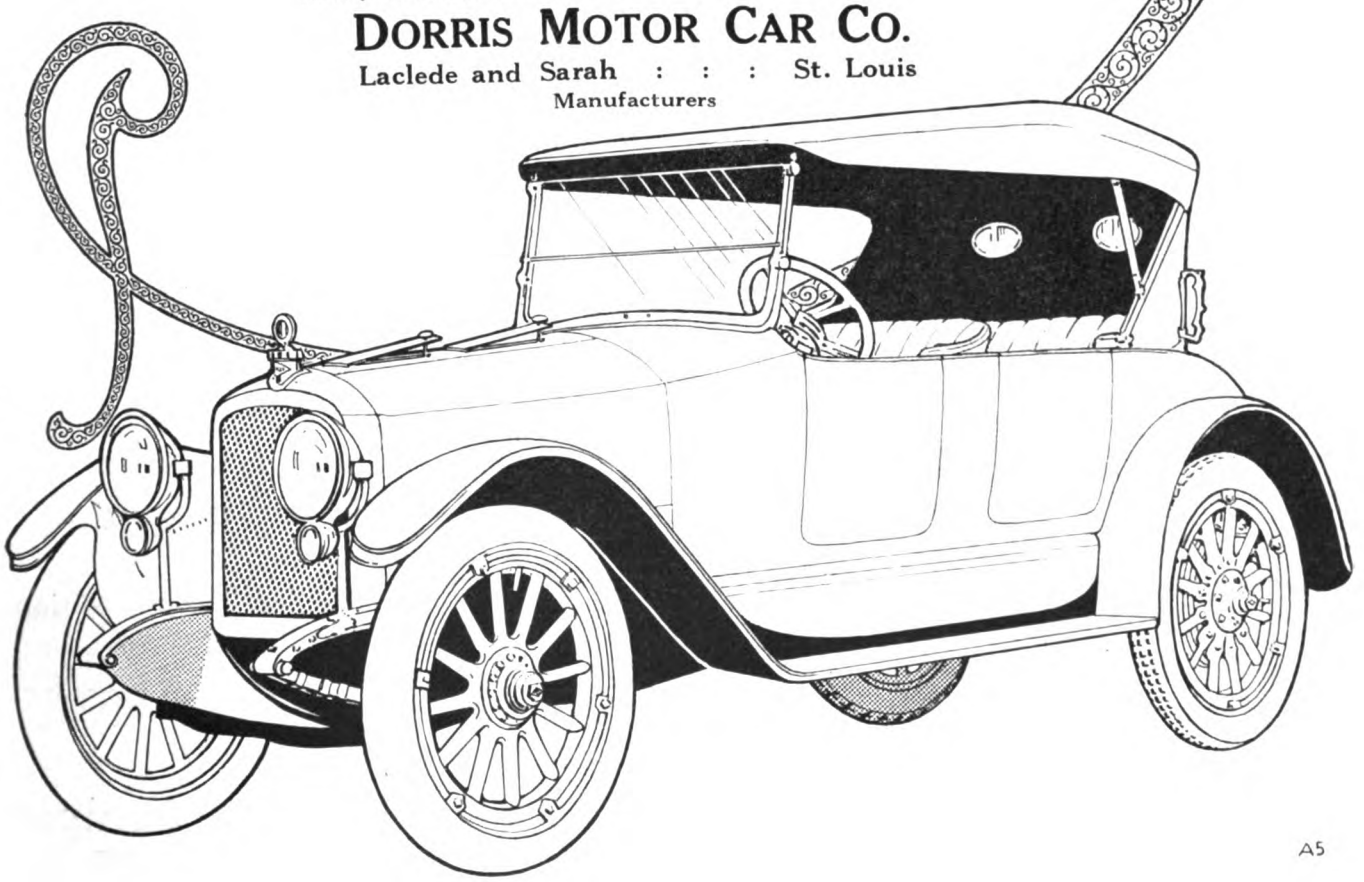
The Dorris Truck is everything a power-wagon *should* be—fit for strenuous work—efficient, economical. It is a notable success.

TO DEALERS: Our agency will swell your 1918 cash account. Write us, *today*, for the most remarkable sure-money proposition ever offered in the motor trade. Learn what *real* factory co-operation means.

DORRIS MOTOR CAR CO.

Laclede and Sarah : : : St. Louis

Manufacturers



A5

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Reason

Should influence your decision in the selection of your Spark Plug Stock—*There are many good reasons why*

MASTER

Calorite Spark Plugs

should be your selection—

Their design is in accord with the best automobile engineering demands and practices—

They are sturdily constructed of the finest materials obtainable.

They are tested under rigid inspection rules—

They are generously guaranteed thus—

OUR LIBERAL GUARANTEE

"We guarantee Master Calorite Spark Plugs against all defects of material or workmanship and will replace free of charge any Calorite insulators broken by heat which are returned to us transportation prepaid."



Master Calorite Spark Plug
Regular Length, $1.00 each

And in their resale you derive a margin of profit which justifies your whole hearted recommendation of these plugs to your customers for—**Long lived, dependable spark plug service.**

There is a Master Calorite Spark Plug for every variety of service—

And the retail price is amply justified by their efficiency and durability—

$1.00 and $1.25 Retail
depending upon the size

Let us send you full details regarding our proposition to the trade. You will find it most attractive.

MASTER CALORITE SPARK PLUGS

Made in U. S. A. and guaranteed by

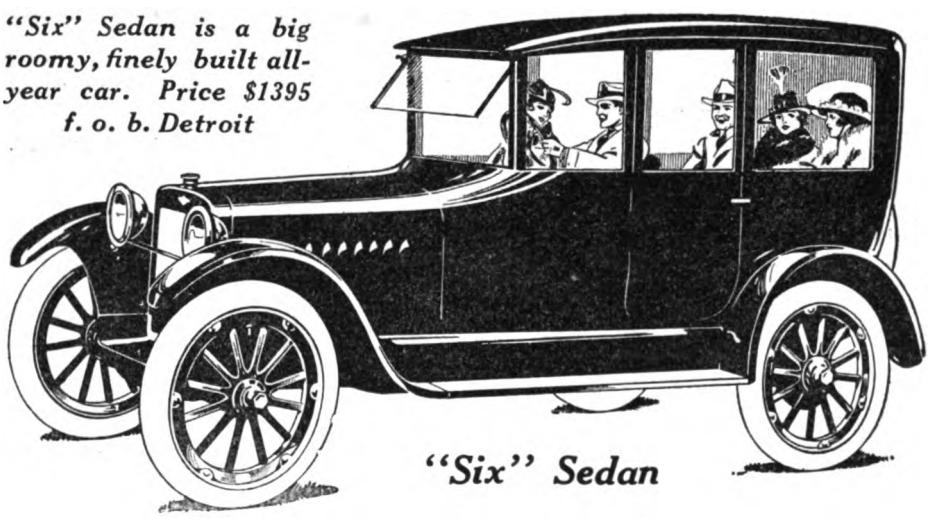
Hartford Machine Screw Company
530 Capitol Avenue HARTFORD, CONN.

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Saxon Sales Bulletin

No. 1 *Issued Monthly by the* SAXON Strength-Economy-Service *Saxon Motor Car Corp., Detroit*

A Steady Year-Round Business with the Saxon Line



"Six" Sedan is a big roomy, finely built all-year car. Price $1395 f. o. b. Detroit

"Six" Sedan

How many, many automobile dealers there are who expect their business to slacken during the winter months. But not the Saxon dealer.

That is one of the interesting and profitable advantages of being a Saxon dealer. His business is not a seasonable business—it is steady year-round business.

With the coming of cold weather he finds the Saxon "Six" Sedan his big seller.

It is a beautifully built closed car, the fine result of careful coach work and expert workmanship, mounted on the splendid Saxon "Six" chassis.

It is the lowest-priced quality "Six" Sedan on the market—and yet it duplicates 30 cars, ranging in price from $1750 to $10,000, in 12 important points.

That proves its quality and its value as nothing else could.

And it proves the tremendous selling advantage in the hands of the dealer who represents the Saxon line.

This Saxon "Six" Sedan sells for $1395. Teamed with it for year-round selling is the big Saxon "Six" Touring car seating five passengers, $935; the Saxon "Six" Chummy Roadster, a distinctively designed club car seating 4 passengers; and the Saxon "Four" Roadster at $395 fo rthe buyer who wants a completely equipped low-priced car.

As yet we are undecided as to representation in several good territories. Your request for information should be entered at once.

(240)

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New Edition

The Tire Rate Book

All recent price changes are included. Every tire dealer and salesman needs this valuable guide. Its 252 pages are filled with the exact character of information that is most useful.

CONTENTS:

Lists with prices of 127 tire makers' products—both solid and pneumatic, also tubes.

An interesting and instructive treatise on factors which govern tire costs.

Specification comparisons of average American cars for eight years.

Statement showing the total number of dealers, garages, supply houses, repair and charging stations in the United States.

Comparative price schedule of all tires.

Table of metric sizes and their equivalents in inches.

All types of rims illustrated.

Interchange table for oversizes.

Inflation table.

Complete statement of various cars and the tire sizes used for each model.

Standard Telegraphic code.

Pneumatic tire and rim sizes for all passenger cars.

Solid and cushion tire sizes for commercial vehicles—1913 to 1917 inclusive.

You need The Tire Rate Book. It is published three times every year and is the invaluable guide for every man connected with the trade. Single copy, 25 cents. Yearly subscription price, 50 cents. Send your subscription now.

SUBSCRIPTION ORDER

THE CLASS JOURNAL CO.,
Publishers The Tire Rate Book,
239 West 39th St., New York City.

Gentlemen:—

Enclosed please find 50 cents for subscription to The Tire Rate Book to begin with the Sept., 1917, issue—just out.

Name _____

Address _____

The Class Journal Company

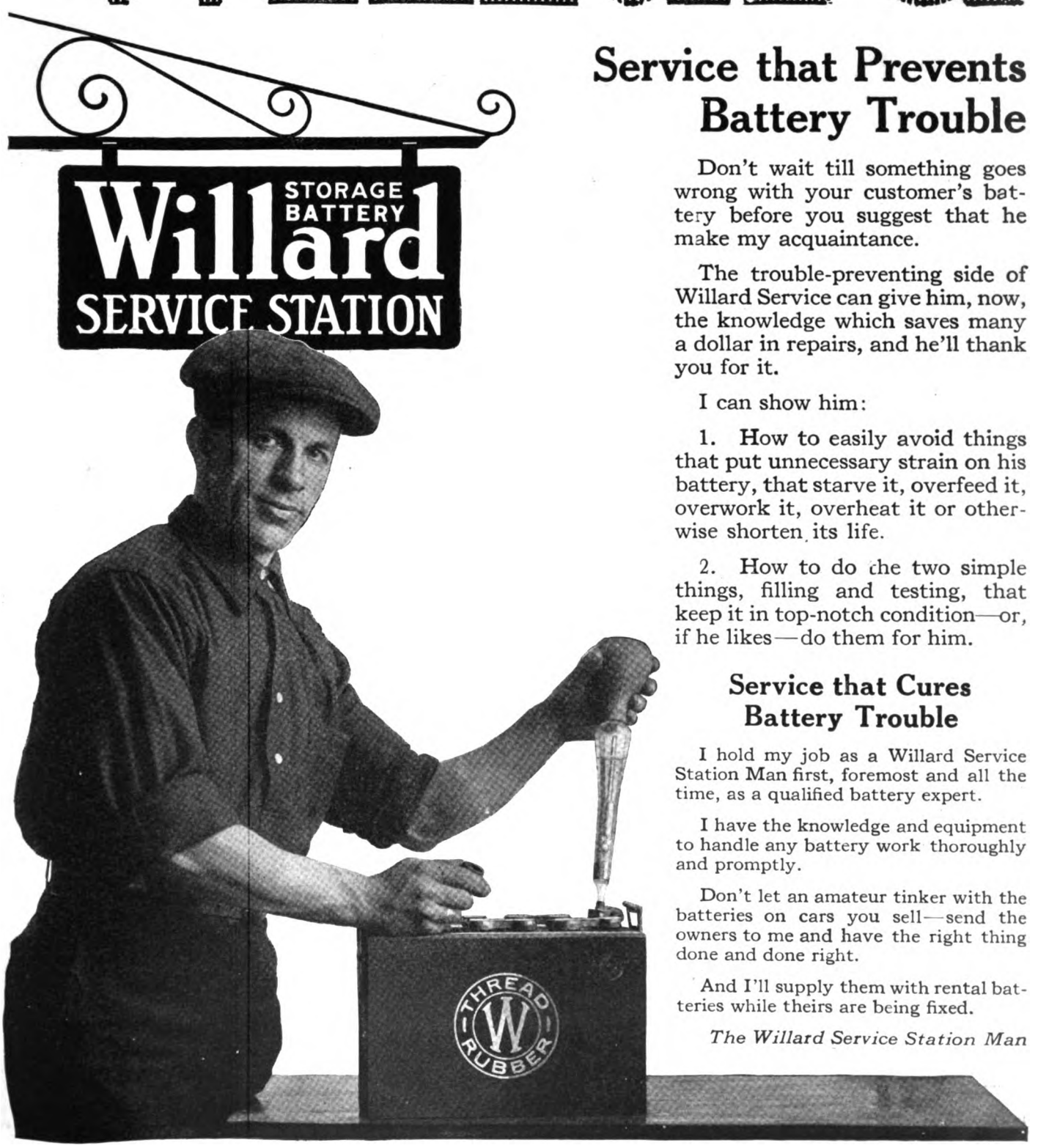
Publishers The Tire Rate Book

239 West 39th Street, NEW YORK CITY

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Willard STORAGE BATTERY

Willard Threaded Rubber Insulation



Service that Prevents Battery Trouble

Don't wait till something goes wrong with your customer's battery before you suggest that he make my acquaintance.

The trouble-preventing side of Willard Service can give him, now, the knowledge which saves many a dollar in repairs, and he'll thank you for it.

I can show him:

1. How to easily avoid things that put unnecessary strain on his battery, that starve it, overfeed it, overwork it, overheat it or otherwise shorten its life.

2. How to do the two simple things, filling and testing, that keep it in top-notch condition—or, if he likes—do them for him.

Service that Cures Battery Trouble

I hold my job as a Willard Service Station Man first, foremost and all the time, as a qualified battery expert.

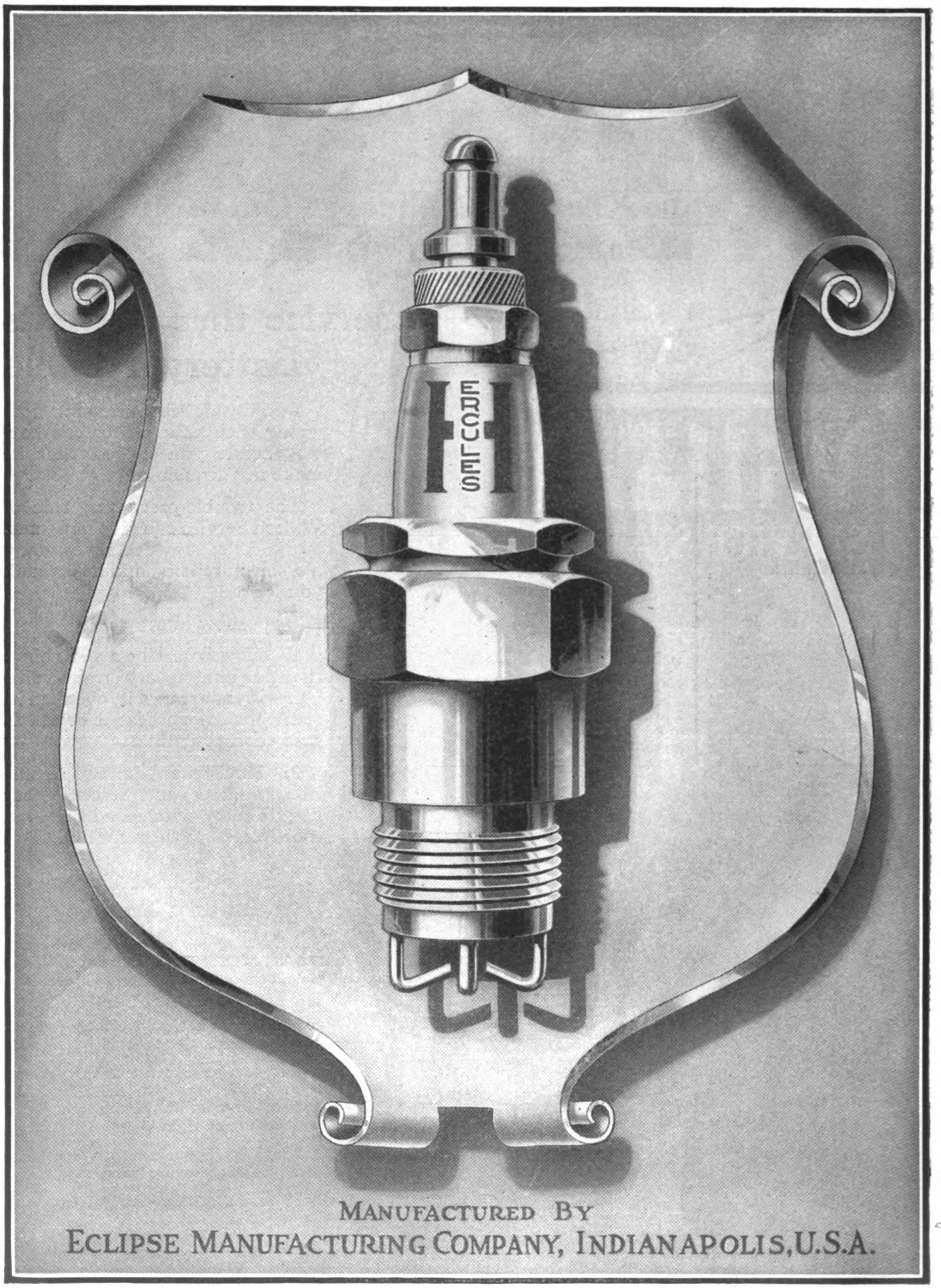
I have the knowledge and equipment to handle any battery work thoroughly and promptly.

Don't let an amateur tinker with the batteries on cars you sell—send the owners to me and have the right thing done and done right.

And I'll supply them with rental batteries while theirs are being fixed.

The Willard Service Station Man

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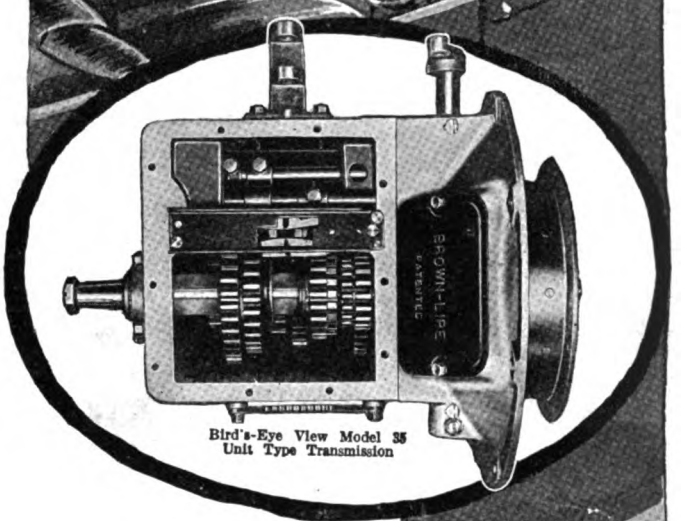
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THINK!
When You Shift Gears

you are putting two great forces into conflict: the power of the engine against the resistance of the load.

The gears in the transmission, and the gears in the differential housed in the rear axle play a more important part in car operation than you realize.

The quality of the steel, the design of the gear teeth, and the special heat treatment that gives them maximum wearing surface and strength are responsible for the reputation of



Bird's-Eye View Model 35 Unit Type Transmission

BROWN-LIPE
TRANSMISSIONS

Over 180 Pleasure and Commercial car manufacturers use either Brown-Lipe Transmissions or Brown-Lipe-Chapin Differentials as standard equipment.

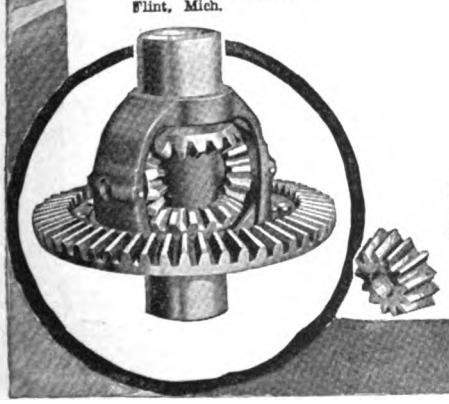
Particulars will be furnished to owners, dealers and manufacturers on request.

BROWN-LIPE GEAR CO.
TRANSMISSIONS

BROWN-LIPE-CHAPIN CO.
DIFFERENTIALS

Factories and General Offices: Syracuse, N. Y.

Representatives:
New York: Thos. J. Wetzel, 29 W. 42d St.
San Francisco: A. H. Coates, 444 Market St.
Foreign Agent: Benjamin Whittaker, 2 Norfolk St., Strand, London, W. C.


Bevel Type Differential used by Dort Motor Car Co., Inc. Axles built by Walker, Weiss Axle Co., Flint, Mich.

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Acason
THE OWNER FIRST

Acason
THE OWNER FIRST TRUCKS

TRUCKS

TRUCKS

The Acason Truck is a business builder for dealers—

Because it offers a complete line:

Because it has a perfect score in service-satisfaction in almost every kind of truck use:

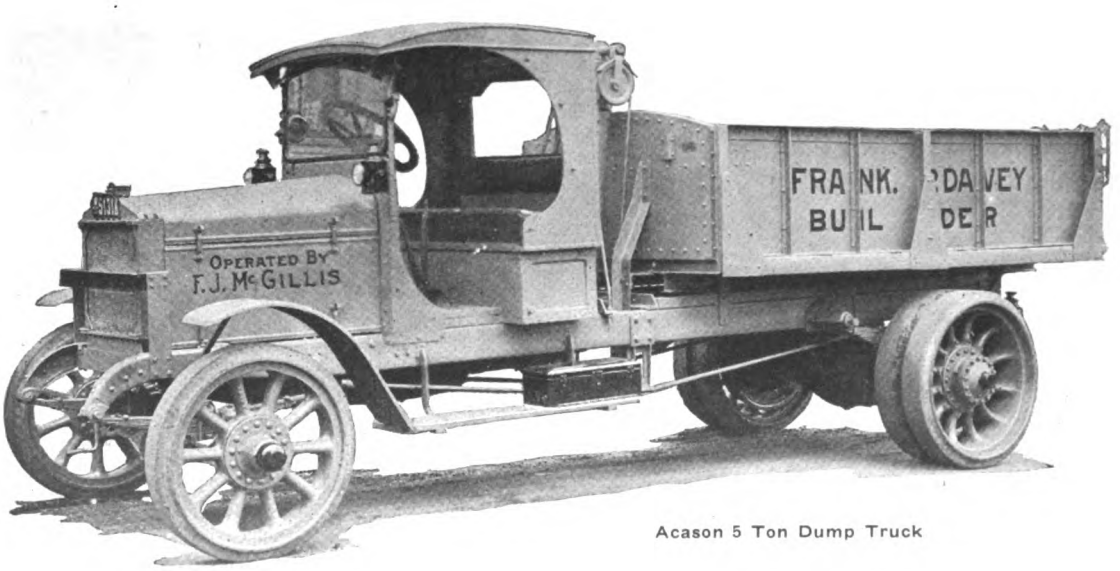
Because the factory backs the dealer in an exceptionally broad service policy:

Our proposition to good dealers is well worth your consideration—it will pay you to investigate.

1½ ton Truck	$2100.00	3½ ton Truck	$3200.00
2 ton Truck	2400.00	5 ton Truck	4200.00
Light Tractor	$2500.00		
Heavy Duty Tractor	3800.00		

Immediate Deliveries

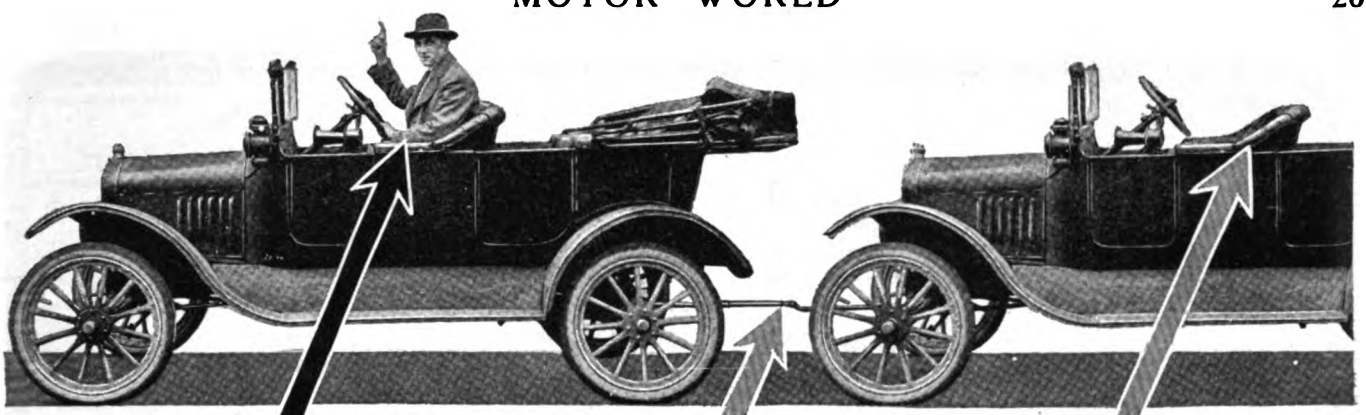
ACASON MOTOR TRUCK CO.
DETROIT



Acason 5 Ton Dump Truck

THE OWNER FIRST

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ONE MAN *with a* TOZALONE *without a helper* CAN NOW TOW IN FORDS ALONE!

You don't need a helper with the TOZALONE because it pulls—holds back—and steers—the only towing equipment on the market which brings them in without a helper in each car.

You can hook the TOZALONE to the rear axle of *any car* in 60 seconds—you can tow in one—two—three or more Fords and the only labor required is the man in the front machine.

Stops the Accidents Which Happen With Ropes and Chains and Cables

How many times have you started out to tow a Ford in with a rope or a chain—or a cable—and steered it all the way back through a cloud of dust—expecting every minute to be compelled to make a sudden stop or have a rear end collision?

The TOZALONE tows Fords in with perfect safety—the rear car automatically starts and stops at the same time as the front one—and a collison is *impossible*.

YOU NEED IT—

—for hauling in cars for repairs.
—for bringing "drive-aways" home from your distributing center.

The TOZALONE is just as valuable for hauling "drive-aways" home from your distributing center as it is for hauling in cars for repairs—you simply send a single man for one, two or three cars—and he brings them back more easily alone with TOZALONES than he now does with a whole crew of helpers.

Get Your Tozalones Immediately On a Money-Back Guarantee

There is no uncertainty about the results you will get from the TOZALONE. You simply use the TOZALONE for ten days on your ordinary everyday work—and unless you are more than pleased at the end of that time you return it and get your money back without the slightest question.

To get quick action on this proposition write today for illustrated literature—or better still, mail your order with check or Money Order for $8.65 (In Canada $12.00) and the TOZALONE will be rushed right out to you on an absolute *Money Back Guarantee*.

Consolidated Motors Company, 965 Chamber of Commerce Bldg., Detroit, Mich.

TOZALONE

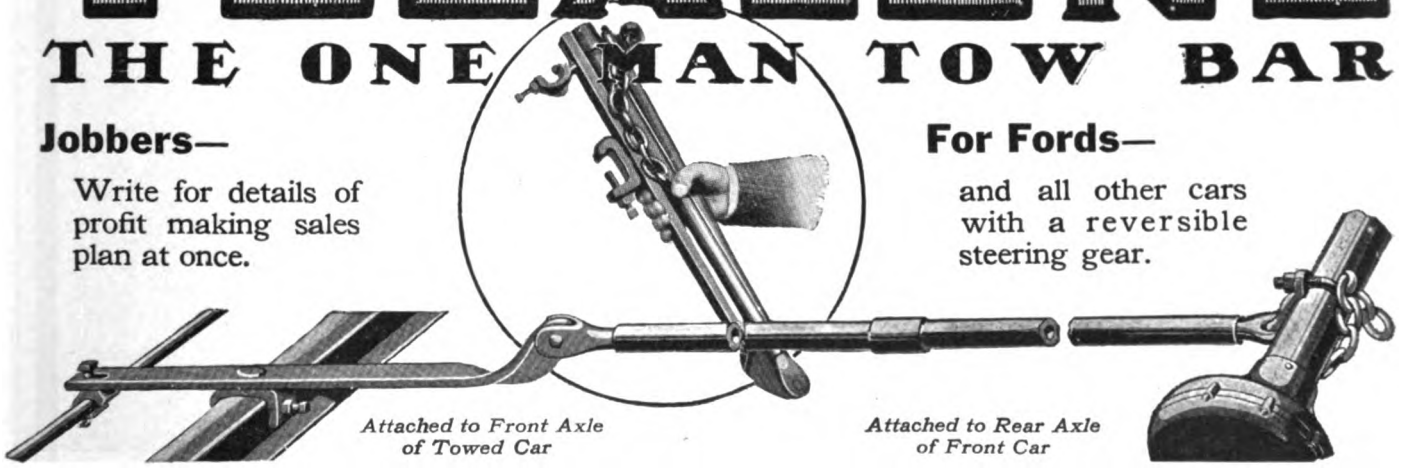
THE ONE MAN TOW BAR

Jobbers—

Write for details of profit making sales plan at once.

For Fords—

and all other cars with a reversible steering gear.



Attached to Front Axle of Towed Car

Attached to Rear Axle of Front Car

PRICE $8.65 - Satisfaction or your money back!

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A PAIR OF SPOTLAMPS FOR SAFETY





Nickel finished door, streamline body—adds beauty to any car.



Special sealing cord makes lamp rattle proof and dust proof.



Door released by pressing button and turning door frame.



Mirror is inserted from inside, flush with body.

While one spotlamp lights the road ahead, the other searches out the turn, locates the approaching vehicle and flashes a warning to the driver behind.

There is no such thing as failure to see a turning signal if it is given with a Victor.

There is no such thing as a badly lighted road if you have two spotlamps.

The Victor No. 50 is the lamp of instant action, of safety, of convenience.

The handle is easy to find, naturally easy to grip. The Cutler Hammer Switch is inside the handle just where your fingers instantly find it.

The Victor has a handsome streamline body with mirror neatly inserted from the inside flush with the body,—a silver plated searchlight reflector,—a hingeless nickeled door, that opens with a push button, of design to match design of car.

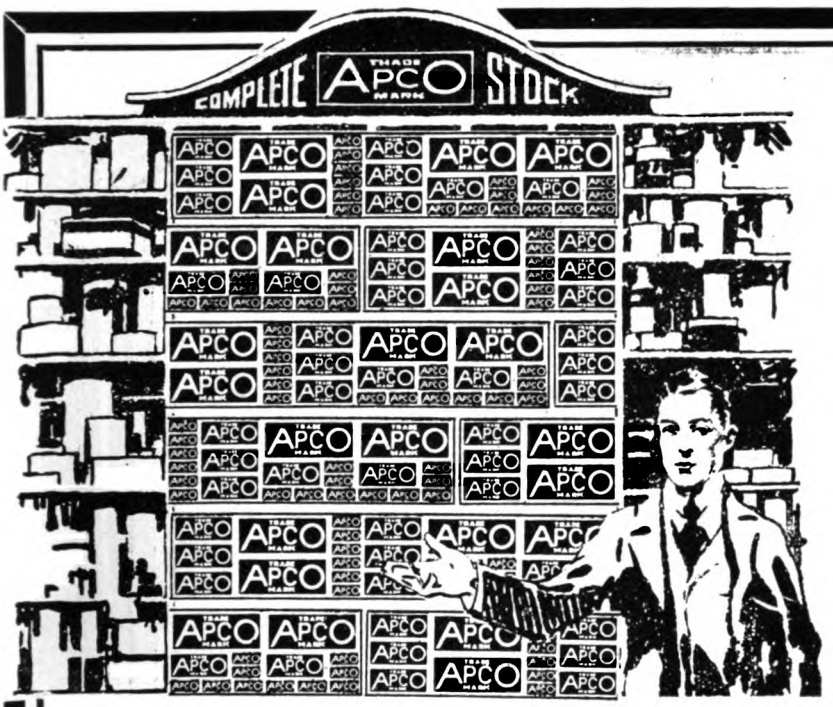
Reflector and lens are held by interlocking clips preventing the lamp from getting out of focus and making it rattle proof and dust proof. The three inch mirror and six feet of conductor cord are furnished at no extra charge.

Price $5.00 each, $10.00 the pair.

Victor
TRADE MARK

THE CORCORAN VICTOR COMPANY
704 Reading Road **Cincinnati, Ohio**

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The Apco Dealer Gets The Business

With a complete stock of APCO NEEDS FOR FORDS you are squarely in position to capture the trade of thousands of Ford owners.

This is not idle talk—

We are the first and now the only exclusive manufacturers of accessories for Fords in the country, and our quantity production makes possible extremely low prices.

The Apco Line is a quality line which includes real Ford necessities—it means a real compelling bid for business with an unnumbered host of prospects.

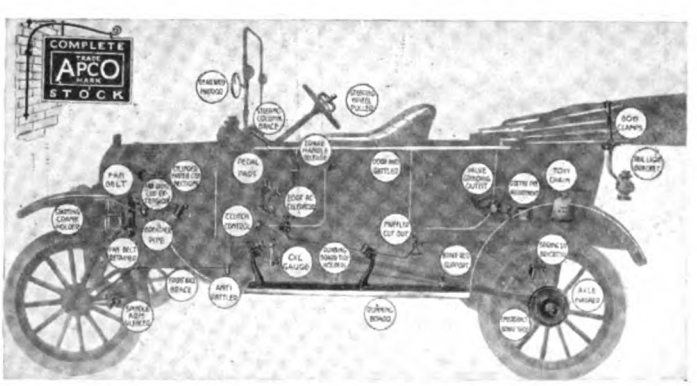
APCO IS THE BUY WORD FOR FORD OWNERS

$100 buys a complete stock—together with catalogs bearing your imprint.

Supplied through the jobber only.

Write for details, *giving your jobber's name.*

Apco Manufacturing Co., Providence, R. I.



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ATWATER KENT

SCIENTIFIC IGNITION

can be depended upon for consistent performance under the most adverse conditions

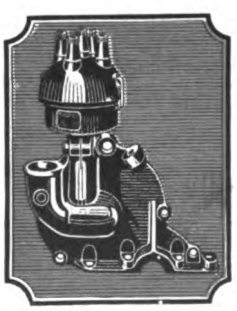
YEARS of experience with all kinds of ignition systems has convinced more than twenty Automobile manufacturers that Atwater Kent Scientific Ignition more nearly approaches the ideal system—that its mechanical simplicity and unfailing performance are an additional service factor to car buyers.

The gratifying experience of the Hupmobile Company is being duplicated consistently on various Atwater Kent equipped cars.

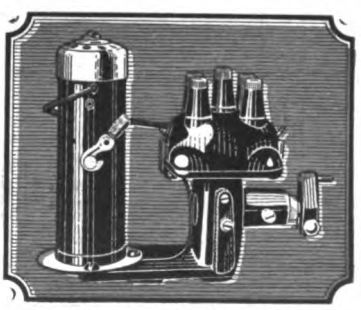
Shrewd dealers have sensed the direction of ignition opinion and lined up accordingly We have a liberal dealer proposition for you. Write Sales Department for complete information.

ATWATER KENT MFG. WORKS
Philadelphia

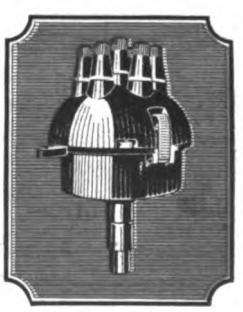
ATWATER KENT MANUFACTURING WORKS, 4942 STENTON AVENUE, PHILADELPHIA, PA.



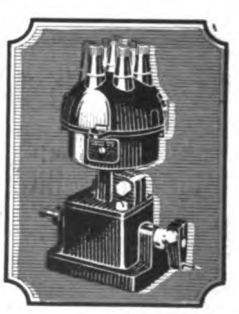
Type K-2 Outfit for Ford cars with Automatic Advance Feature



Type CC Magneto Replacement Outfit Specially adapted to Maxwell, Overland and other 4-cylinder cars



Type K-3 System for Standard Equipment



Type K-2 on Magneto Base

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ADDRESS ALL COMMUNICATIONS TO THE MAIN OFFICE AT DETROIT

Hupmobile

MANUFACTURING PLANTS
DETROIT, MICHIGAN.
JACKSON, MICHIGAN.
WINDSOR, ONTARIO.

CABLE ADDRESS
"HUPP DETROIT"
LIEBER, A.B.C. 5TH ED.
WESTERN UNION CODES.

The Mark of Superior Motor Car Service

Hupp Motor Car Corporation
Detroit, Michigan, U.S.A.

The Atwater-Kent Manufacturing Co.
Philadelphia, Penna.

ATTENTION: Mr. Rice.

Gentlemen:

It is our desire to give a full measure of credi. .o the manufacturers of the Atwater-Kent System of Ignition for the successful completion of the twenty thousand mile Hupmobile Capital-to-Capital Tour.

Never in the entire trip were repairs of any nature to this ignition necessary, the only attention the assembly received being adjusting and oiling as needed.

Volumes would be required to explain the unusual road conditions encountered by the sturdy HUPMOBILE on this remarkable tour, and a great deal of credit is due to the wonderful performance of the Atwater-Kent System which supplied millions of sparks without once faltering.

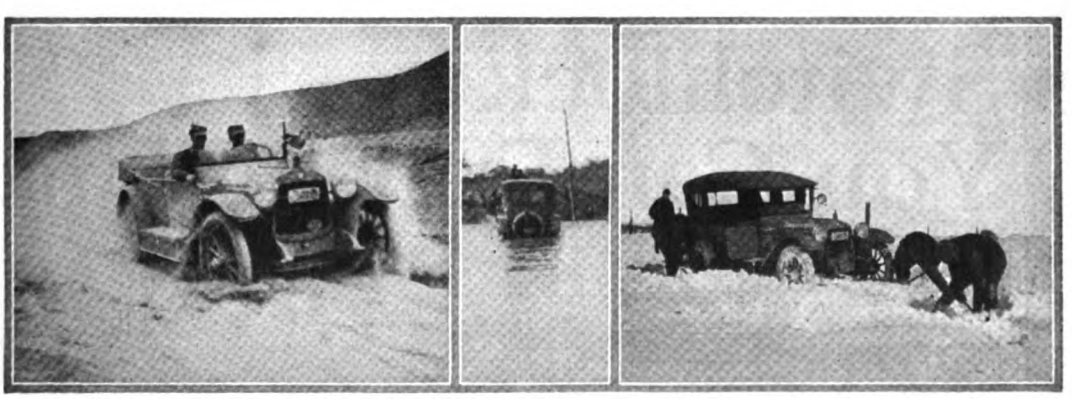
We can confidently say that a test of this nature is proof conclusive that in the Atwater-Kent System IGNITION has reached the ZENITH OF DEPENDABILITY AND SIMPLICITY.

Very truly yours,

C. E. Salisbury,

CES:MEB

Captain, Hupmobile United America Tour



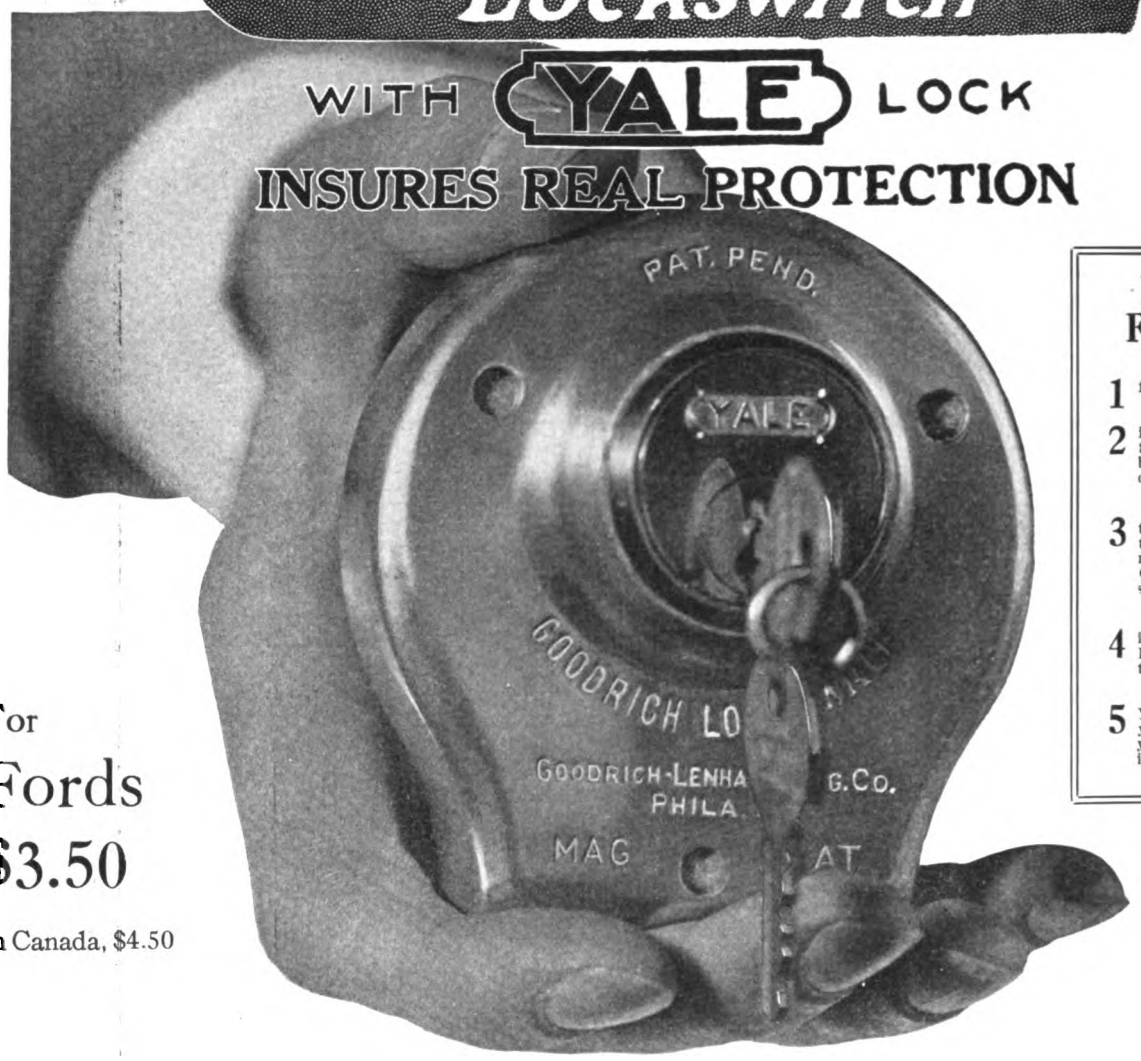
Over good roads and bad—through dust, mud, water and snow—20,000 miles in four months—this is the record of the United America Hupmobile, *Atwater Kent Equipped,* on its tour to every capital in the United States

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Goodrich LOCKSWITCH

WITH YALE LOCK

INSURES REAL PROTECTION



For
Fords
$3.50
In Canada, $4.50

Note These Five Features

1. The lock used is the famous Yale lock.
2. The switchlock housing is made of a special ductile metal, which cannot be split, broken or cracked.
3. The screws by which the switchlock is attached cannot be removed, because of the GOODRICH patented shutter construction.
4. The switchlock housing is designed to fit so snugly that it is impossible to pry it loose.
5. The same turn of the Yale key that shuts off your ignition also locks your car and safeguards it against theft.

This Switchlock You Can Depend Upon—

There are five very practical reasons why such a large percentage of Ford owners use GOODRICH Switchlocks to safeguard their cars against theft.

Thanks to its five big features, the GOODRICH Switchlocks is as completely thief-proof as a locking device can be built.

These features lead to an "all-year-'round" demand such as no similar device has ever enjoyed.

Just question dealers about Switchlocks for Fords and see how, almost invariably, they recommend the GOODRICH.

Dealers and jobbers alike prefer to sell their customers GOODRICH Lockswitches because of their greater reliability and because of the greater protection they offer.

For these reasons virtually every jobber in the country and many thousands of good dealers sell GOODRICH Switchlocks.

Easy to install. A screw-driver will do—no other tools required. See your dealer TODAY and safeguard your Ford against joy-riding borrowers and thieves. Tomorrow may be too late.

DEALERS. Order from your nearest jobber or direct. A beautiful five color demonstrating display stand, suitable for window or counter, is furnished free with every dozen locks ordered.

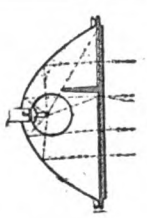
GOODRICH-LENHART MFG. CO.

418 Widener Building Factory, Hamburg, Pa. **Philadelphia, Pa.**

When writing advertisers please mention Motor World—It identifies you

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Mr. Distributor:
There are still a few sections open for exclusive sales rights. It will pay you to write for our special proposition if your organization is qualified to handle large sales.

For the fin is the exclusive feature of the HOLOPHANE LENS that absolutely keeps the glare confined to the road and does not lessen the headlight power. Therefore no glare is possible.

The HOLOPHANE LENS for Automobile Headlights is the result of years of exhaustive study and experiment by the HOLOPHANE CO., who for a generation have been the acknowledged leaders in the design and manufacture of scientific prismatic glass for the control of light. The aim has been to secure a lens which would obviate the glare and yet retain its full headlight power. Amazing success has crowned the effort.

The HOLOPHANE LENS, by means of the exclusive feature, the fin, absolutely keeps the concentrated search light beam below the 42 inch level as prescribed by law, lights the road far ahead and provides ample light directly in front of and to the side to see curbs, ditches, etc.

A great lens of perfect performance, backed by a great company. A list of prices surprisingly low for prismatic lenses and a trade discount which is most liberal.

Mr. Dealer get busy.

Look for the name, Holophane, on the flange. Do not accept substitutes.

The Holophane Prices

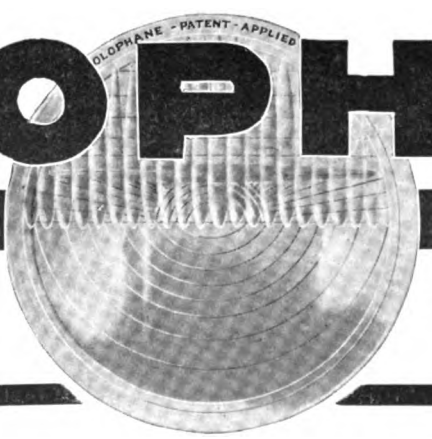
Diameter	Per Pair U. S.	Canada
7 to 8¾ inches	$2.75	$3.30
8⅞ to 9⅝ inches	3.50	4.20
9¾ to 10½ inches	4.00	4.80

West of the Mississippi River add 25 cents each.

Write or wire today for discounts and further information.

HOLOPHANE
SYSTEM OF ILLUMINATION

HOLOPHANE



THE LENS WITH THE FIN

THE HOLOPHANE COMPANY

344 Madison Avenue
New York City

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Dealers—Fatten Up Your Bank Books This Winter With Dyneto Sales

There's a strong, compelling desire today among farmers and isolated householders, a desire which amounts to a demand, for some efficient lighting system to take the place of the old oil lamps and other flame lights which at best yield poor illumination and are always dangerous.

Mr. Dealer—The Dyneto Electric Lighting Plants offer a wonderful opportunity to you for a profitable winter business which you can easily dovetail into your regular activities.

Indeed, we are not overstating when we say that this winter business, handled with energy, may outdo all your summer trade in point of hard cash profits.

The Dyneto Electric Lighting Plant, made and guaranteed by a company of national reputation, means great selling profits because it gives to the buyer positively the best and most economical lighting service and at an initial cost which is relatively small

Dyneto
TRADE MARK

IN CONSTRUCTION the Dyneto Electric Lighting Plant is simple and strong. There is nothing to get out of order and nothing to misunderstand. It can be run by a child with ease and safety.

IN SERVICE it gives a pure, steady, brilliant light at a remarkably low cost.

THE FIRST MAN YOU SELL becomes a booster for you. His neighbors hear about it and sales follow rapidly.

THERE ARE THREE SIZES so that each prospect can suit his needs.

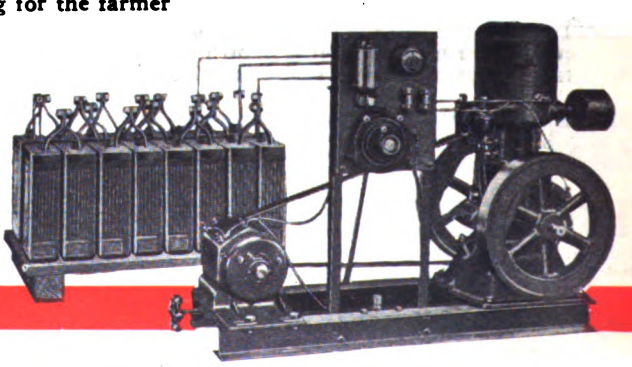
A NATION-WIDE ADVERTISING CAMPAIGN in the farm papers which your prospect reads serves as another big pulling force and every inquiry which comes from your territory is turned over to you.

EVERY FARMER WANTS ONE—Why shouldn't he? Just think—a light in every room in the house, in the cellar, in the barns and outbuildings—no dangerous kerosene lanterns for cattle to kick over, no mussy lamps for the woman folks to fill, clean and trim—and most important of all—no possibility of fires, which means a consequent reduction of insurance rates.

THEN, TOO, a belt can be run from the pulley of the gasoline engine to a line shaft to operate the churn, pump, separator, washing machines and other light pieces at the same time that the batteries are being charged for light. This is a wonderful thing for the farmer and for you.

INSTALL A DYNETO PLANT FOR YOURSELF. It will light your garage, operate your pump and other small machinery, put you in a position to charge your customers' storage batteries and serve as a demonstrating outfit. Your familiarity with gasoline motors and first-hand knowledge of Dyneto Motors will give your words added weight with the prospect.

DEALERS—Can't you see winter profits in this? Can't you see an opportunity for big things beside which other propositions seem insignificant? We have a mighty liberal proposition to offer you in the way of wholehearted co-operation and real genuine profits and it's simply up to you to write for it.

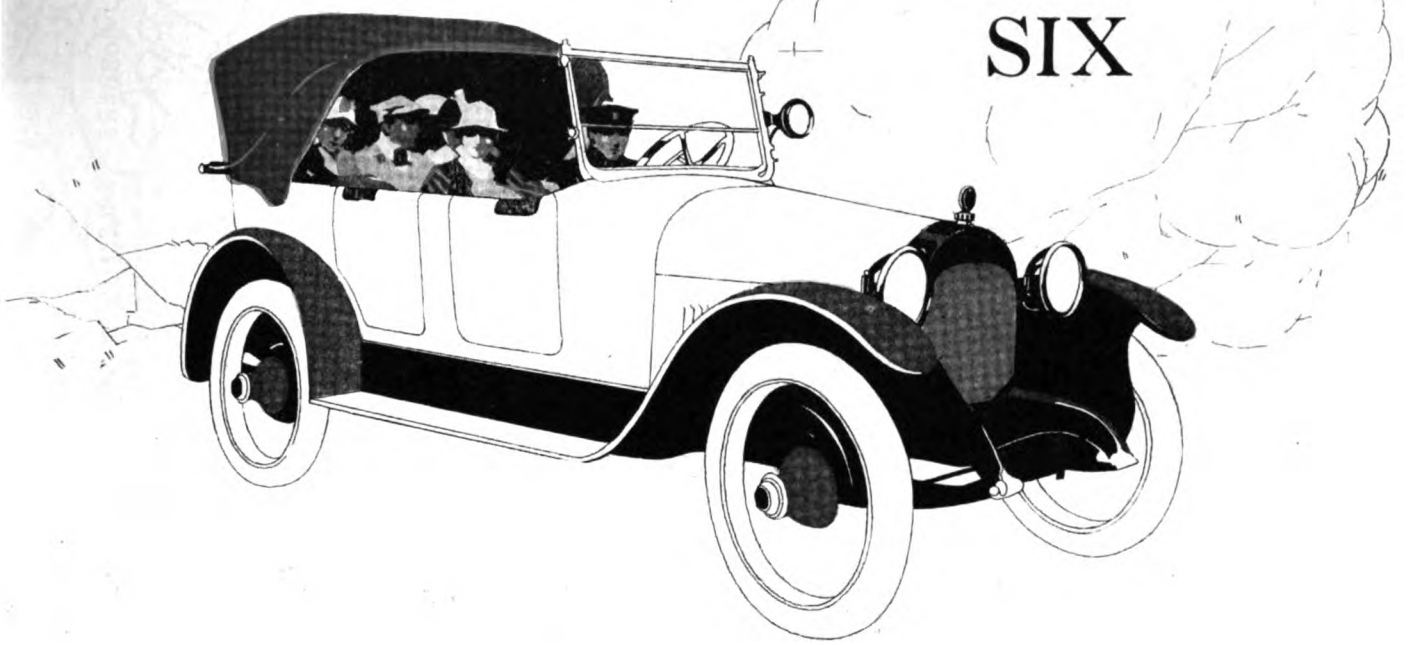


Dyneto Electric Company
Syracuse N. Y., U. S. A.

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ANDERSON

SIX



Finely Built, Good Looking Bodies —and a Powerful Chassis

FOR 28 years this company has designed and built fine coach work of world wide reputation.

This fact is worth mentioning for it explains why Anderson cars possess individuality—pleasing and distinctive individuality.

It explains why a car so moderate in price can incorporate such excellence in body design and finish.

It explains a significant saving too—for other car manufacturers who must buy their bodies must pay the body builder his profit.

The money thus saved to us is devoted to making the car better mechanically, and in equipping it more completely.

From radiator to tail lamp, every mechanical unit is of completely establishe l merit and of highest reputation.

A speed of from 5 to 60 miles an hour on high is available.

Average gasoline consumption 17 miles to a gallon. Wheel base 120 inches Weight 2750 lbs. Spring suspension, semi-elliptic underslung; rear springs 56 inches long.

Regular Equipment.

Klaxon motor driven horn, Kellog engine driven tire pump, Hawthorn "Old Sol" spot light, Boyce Motometer, Utility tonneau combination foot rest and heater. Stewart speedometer. Gasoline and oil gauge on dash.

Anderson bodies are built on staunch frames of dry seasoned Oak and Ash, sawed to shape, braced and counter braced with all joints mortised.

The finish is hand applied and hand rubbed, insuring the same deep and lasting lustre that is given the finest types of custom built bodies.

The upholstery is form fitting of real curled hair over a bed of fine coil springs, tailored in real leather, French plaited.

Color combinations include Submarine Gray, Olive Green and Sage Green. Special colors at slight additional cost.

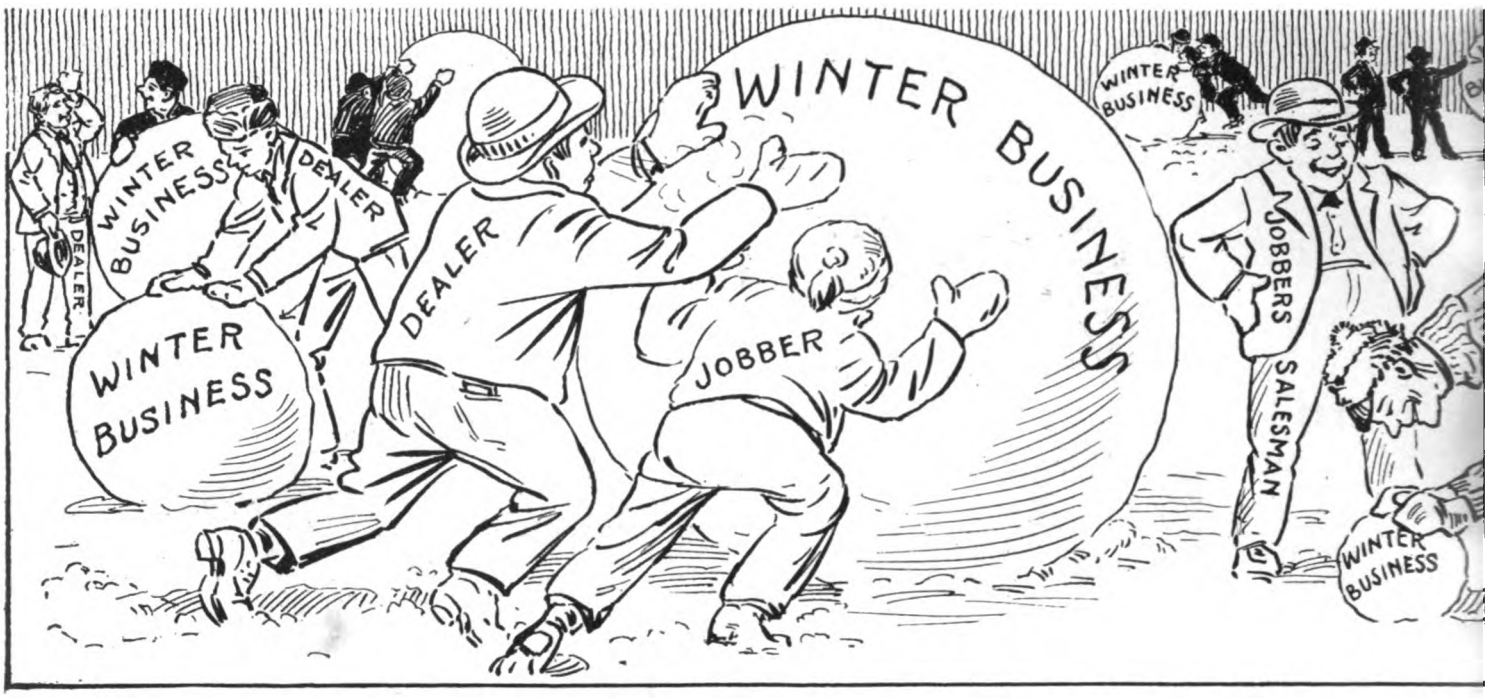
Literature available and will be mailed on request.

ANDERSON MOTOR COMPANY
Rock Hill, South Carolina

Foreign Dept. 8-10 *Bridge St., New York City, U. S. A.*

Sedan Convertible	$2,100	*Touring Car, with straight front seat*	$1,395	*Victoria Top, Including Regular Touring top, extra*	$150
Convertible Sport Car	1,395	*Touring Car, with divided front seats*	1,395	*Houk Wire Wheels, extra*	100

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"WINTER BUSINESS

Accessory Sales

There are hundreds of articles which if brought forward and properly featured at this particular time will help to swell the winter Profits. Take "COMFORT" as the keynote of your winter business in Automobile Supplies, and pick out every article in your stock that can be sold from this angle—and watch the outcome.

In the Shop

If your Foreman is on the job he will be making a list of all the Cars in your locality that will need overhauling this Winter. He can do it. When the car comes in have him make a note of its condition, then when you are ready to do the work, write the owner a personal letter or go and see him. You should be able to get 75 per cent returns on this plan.

The Jobbers and Manufacturers of and Anxious

The National Association of Automobile Accessory Jobbers realize that they can only succeed through your success. There are 3,000 Accessory Salesmen and the organization of two hundred and fifty Manufacturers who are ready and anxious to assist you to "make winter business Profitable." Don't be backward about asking them to help you.

THE NATIONAL ASS'N OF AUTOMOBILE ACCESSORY JOBBERS MEMBER

National Association of Aut

City Hall Square,

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MADE PROFITABLE"

Enclosed Cars

The enclosed car is a car sales proposition without question, but it is also the accessory and garage man's proposition, and should be encouraged by them. Every time a new recruit is added to the army of Winter drivers it means that there is another man buying tires, oil and accessories, and having repair work done. Help your neighbor on closed car sales if you don't sell cars yourself.

Oils and Batteries

You will find that you can sell your customers their oils and greases during the Winter season while your Salesmen are going slow on other sales. You can sell 15 and 30 gallon drums and barrels to the Farmers—at the same time your man can test the batteries he finds and secure the order for the overhaul of the battery or a new battery for replacemnt.

Automobile Supplies Are Ready to Help You

Every manufacturer has Advertising matter that you can distribute through your mail—hand out in your show room—ask for window and interior decoration. If you use this matter intelligently you can make your place of business Accessory Headquarters for your locality. Local advertising will tell the public where to get the articles they have seen advertised in the National Magazines.

omobile Accessory Jobbers
CHICAGO, ILL.

When writing advertisers please mention Motor World—It identifies you

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MOTORISTS everywhere have unhesitatingly expressed their confidence in the ability of The Prest-O-Lite Co., Inc., to produce a storage battery not only equal to but superior to existing types. That confidence has been justified. From the standpoint of efficiency, longer life and faithful service, the Prest-O-Lite Battery has a character all its own.

Extensive national advertising is presenting the Prest-O-Lite Battery message to the millions of car owners in an intelligent and convincing manner. It tells not only why the Prest-O-Lite Battery is a better battery, but how Prest-O-Lite Service really helps the battery owner. It impresses on their minds the superior power, service and value of the Prest-O-Lite Battery.

And Prest-O-Lite Service gives real, practical help to the Prest-O-Lite dealer—a great country-wide chain of Factory Branches and specially appointed Service Stations provide expert battery service, no matter where you may be.

To the wise dealer this widespread, ever-growing demand for Prest-O-Lite Batteries and the unusual co-operation afforded by Prest-O-Lite Service are extremely significant.

We have prepared "A Special Message to Dealers" which every dealer should read. It tells how the Prest-O-Lite System of Service makes the battery business highly profitable from the dealer's standpoint.

We'll be glad to send you this folder. Write us today.

The Prest-O-Lite Co., Inc.

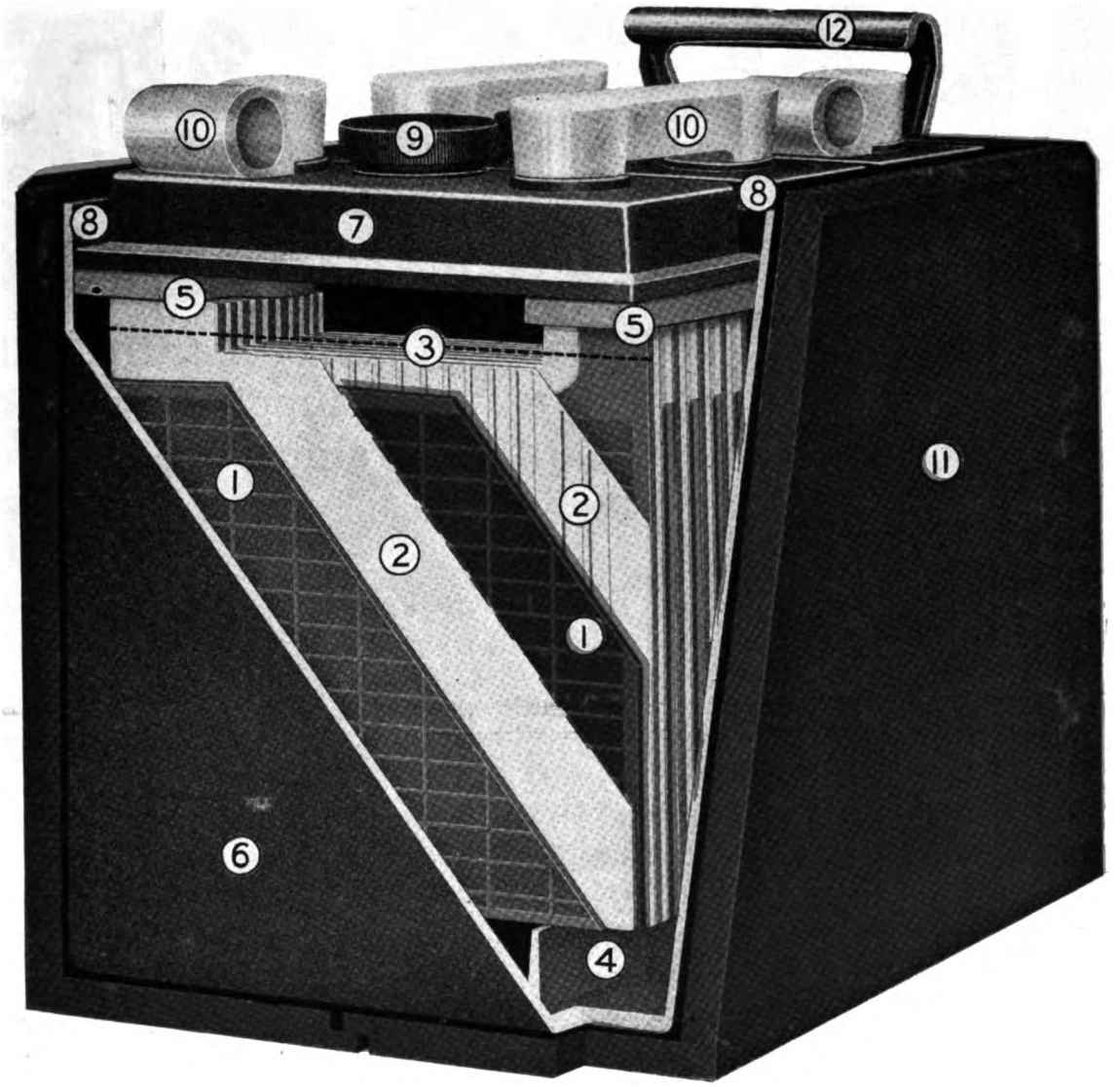
U. S. Main Office and Factory:
902 Speedway, Indianapolis, Ind.
Canadian General Office and Factory:
Toronto, Ont.

DIRECT FACTORY BRANCHES

Atlanta	Des Moines	Montreal
Baltimore	Detroit	New York
Boston	Indianapolis	Omaha
Buffalo	Jacksonville	Philadelphia
Chicago	Kansas City	Pittsburgh
Cincinnati	Los Angeles	San Francisco
Cleveland	Memphis	Seattle
Dallas	Merritton	Syracuse
Davenport	Milwaukee	St. Louis
Denver	Minneapolis	St. Paul
Winnipeg	San Antonio	

Not only a better battery, but

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Twelve Prest-O-Lite Superiorities

1. Plates—Prest-O-Lite plates are extremely porous, insuring quicker chemical action. This is really the secret of a battery's ability to give off a large volume of current with sustained high voltage, even after comparatively long periods of rest. The Prest-O-Lite plate construction puts an end to such battery troubles as "overheating," "injurious sulphation" and "loss of capacity."

2. Separators—Made from carefully selected wood. The wood used in Prest-O-Lite separators is the only material which provides *perfect insulation* without offering an obstacle to *free circulation* of the electrolyte. Without free circulation of electrolyte a battery produces power about like a carburetor running on too "thin" a mixture.

3. Overhead Space—Permits maximum expansion. Larger electrolyte capacity requires less frequent replacement of distilled water lost by evaporation during normal operation.

4. Bridges—Plates rest on bridges which reinforce hard rubber jars against jar breakage due to unusual road strains.

5. Plate Connectors—Substantial design insures maximum current, carrying capacity and great strength for perfect alignment of positive and negative elements.

6. Hard Rubber Jars—Each jar tested electrically at 24,000 volts. Strong enough to withstand the most strenuous service.

7. Jar Covers—Design overcomes acid creepage and corrosion of exposed parts.

8. Sealing Compound—Special composition provides perfect freedom from cracking or softening due to extreme temperature changes.

9. Filler Openings—Provide easy inspection of electrolyte level.

10. Terminals and Cell Connectors—Provide maximum current-carrying capacity, insuring high terminal voltage on discharge.

11. Box—Made from seasoned hard wood with dove-tailed corners to prevent spreading of joints. Built to withstand the roughest service.

12. Handles—Specially designed for firmly securing to hold-downs on all makes of cars.

backed by Prest-O-Lite Service

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BENFORD'S

This Story Points the

In Poughkeepsie, N. Y., on Monday, October 1st, the following scene was enacted in a leading automobile supply store. Read it, Mr. Dealer, it points a positive profit moral for YOU.

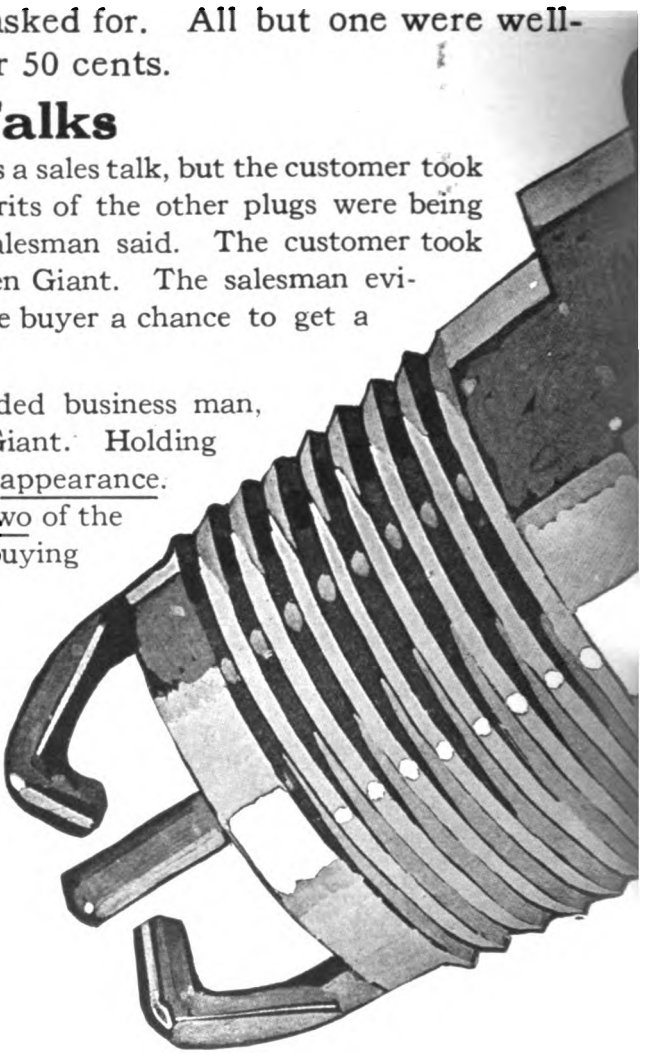
A middle-aged man, owner of a Ford, stepped up to the counter and asked for a spark plug.

The salesman showed six plugs of the type asked for. All but one were well-advertised—one was a private brand that sold for 50 cents.

The Salesman Talks

The salesman made a real effort to give each of the plugs a sales talk, but the customer took the Golden Giant in his hand, and held it while the merits of the other plugs were being explained. "This (blank) plug at 75 cents is good," the salesman said. The customer took it, looked it over, came back and again took up the Golden Giant. The salesman evidently wished to give each plug a fair show, and to give the buyer a chance to get a plug at a lower price if he wished.

All the time the customer, who looked to be a hard-headed business man, not to be stampeded by anyone, held on to the Golden Giant. Holding it, he compared it with the others—in size, design and appearance. The salesman awaited his decision—the buyer could get two of the private brand plugs for a dollar—and save a quarter by buying any one of the others.



The Customer Picks the Golden Giant

After looking over all of them and seeing that all outward features favored the Golden Giant—the big shell, the big, blue adamant insulator, the workmanlike design—the customer said: "I'll take the Golden Giant."

You can duplicate this scene in your store every day. The Golden Giant will sell to the exclusion of all others if you show it. Put it in the showcase—on the counter—in the window—use our display cabinet—but show it.

GOLDEN GIANTS SELL ON SIGHT

Send your jobber today an order for our 50-plug assortment—get the display cabinet which comes with it—and then hustle for Winter Business. And don't forget—we're helping you every minute.

BENFORD MFG. CO., Mt. Vernon, N. Y.

Fifteen Years of Spark Plug Success

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GOLDEN GIANT

Way to Winter Business



Read this Guarantee ⟶

$1.00 Each

It means that at last you can buy with absolute insurance.
You cannot possibly lose.

Sold by Forty Thousand Dealers

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Jobbers & Dealers—Have You Investigated



OUR SPECIAL DEALER OFFER HELPS JOBBERS to help their dealers.

IT IS A PROPOSITION THAT NO DEALER who has the slightest desire to make money and build up business can refuse.

IT IS A CERTAIN METHOD OF SPREADING THE sale of REES Jacks throughout a jobber's whole territory and starting up quickly a demand that will bring him in good, steady, substantial profits.

A BIG DEMAND ALREADY IS IN EVIDENCE, and it is likely that this Special Offer will not be open very much longer.

IT IS SAFEST TO WRITE US NOW—TO-DAY!

OUR SPECIAL DEALER PROPOSITION gives you a chance to get the full advertising value of this new and absolutely unequalled jack.

TO DISPLAY IT IN YOUR PLACE means that every customer will ask to see it work, and actual experience shows that 9 out of 10 who try it buy it.

THE JACK ITSELF IS ITS OWN best advertisement. No other jack can compare to it *in any way!* Its exhibition in your window will attract trade and bring sure profits.

READ THE OPPOSITE PAGE, examine the illustrations, then ask yourself if you have seen or heard of any jack that can approach the REES in simplicity, efficiency, and attractiveness to the motorist.

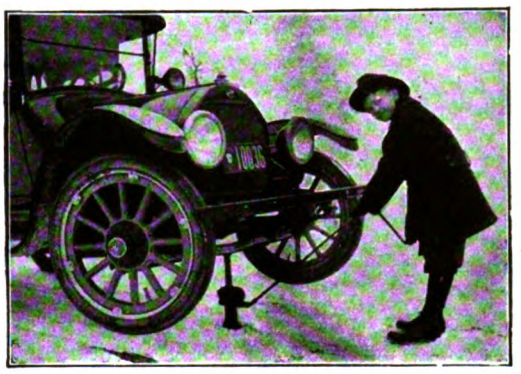


Interior view, showing powerful worm-drive construction. Cannot fall under load or "run out" when inverted.

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The REES JACK?







REES JACK
WORM GEAR DRIVE

ABSOLUTELY OBVIATES CRAWLING UNDER CAR, even to place the jack in position.

WITH ITS LONG HANDLE (THAT FOLDS TO FIT IN TOOLBOX) you can swing the REES Jack into position, raise and lower the car, and remove the jack—all while standing erect. This handle is unfolded in 3 seconds, and locked to jack by one twist of finger and thumb.

YOU TURN THE HANDLE TO RAISE THE CAR, and simply spin the handle with one hand, like a skipping rope, to lower the car. No pumping a ratchet handle or pulling on a greasy chain.

YOU CAN OPERATE THIS JACK AT AN ANGLE. The handle is attached to jack by universal joint which permits operator to stand at a tangent to the jack in case unevenness of ground, mud, or other conditions, makes this desirable.

TREMENDOUSLY POWERFUL, ABSOLUTELY SAFE, worm-drive construction (the most efficient lifting device known). Cannot fail under load or "run out" when held upside down. Factor of safety about 150% over rated capacity.

NOT A HEAVY, CLUMSY JACK, but neat, compact, and easily carried in toolbox.

A CHILD CAN LIFT THE HEAVIEST CAR with it, the daintiest woman can use it without fear of soiling her hands or disarranging her attire.

DEVELOPED LIFTING FREIGHT CARS, to lift a motor car or truck is play for the REES Jack.

IT LIFTS STEADILY, NOISELESSLY, and lowers in the same way. No jerks, no jolts. No springs, pawls, or ratchets.

2-Ton Size (for motor cars) . $8.00 **5-Ton Size (for trucks) . $15.00**

The Service Corporation, Frick Annex, Pittsburg, Pa.

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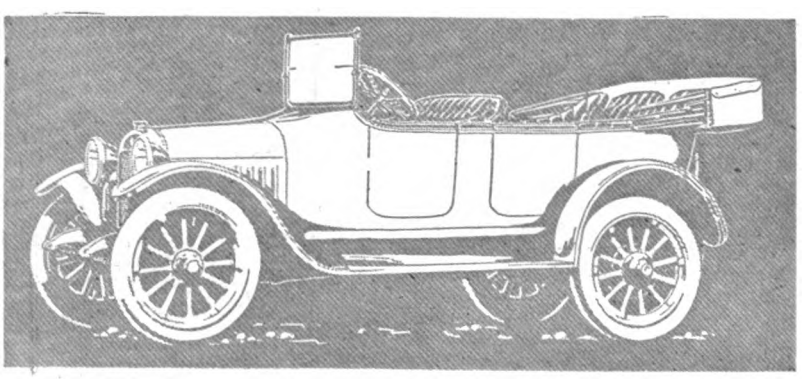
INTER STATE

An Extra Value Car

A Better Car
Better Material
Less Cost
When You Buy
And Afterward

Now $850 to $950

Six Body Styles



Why Extra Value?

"Extra Value" expresses in the shortest possible manner all the good things about the Inter-State, based, not only on mechanical fitness, but also on the service records of thousands of satisfied owners.

With these two words we try to explain—that the actual performance of Inter-State cars has proved them economical to operate—uniformly beautiful in design and color, regardless of the trend of motor car fashions—actually comfortable—and possessing that Power, Firmness and Stability which gives them an extremely high resale value regardless of the length of time they are in service.

We know that the Inter-State engenders those qualities and principles which offer you real value for your money from whatever angle of motor car worth you may base your judgment of values.

Today every buyer has some knowledge of motor cars, and usually has a well defined idea of what his money should buy. You will learn from a careful study of the Inter-State that this car will meet with your ideas of what your money should buy for every dollar invested.

Understand this one fact—you do not have to accept what we claim as being conclusive proof of Inter-State Extra Value. Our desire is not to influence you erroneously. We ask you to compare the value of the Inter-State with any other medium priced car—and to remember that you can verify our claims by asking us for further proof, based on the actual, signed service records from all over the country.

We do feel after you have studied Inter-State quality—materials—detail equipment—and construction—and have thoroughly investigated the strong financial, manufacturing institution behind this car—that you will agree with us when we say that "Extra Value" is the *only* term to apply to this car in order that the whole of its goodness and worth can be adequately expressed and understood.

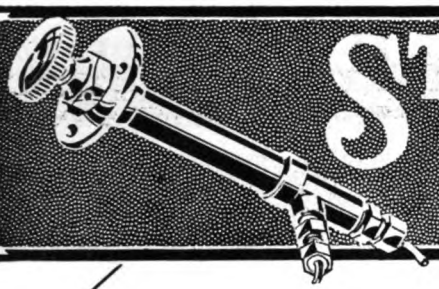
Regardless of the body design you may admire—and there are six to choose from—we know that the Inter-State will do for you what it is doing for thousands of others—save you money NOW—and afterwards.

We will never cheapen Inter-State quality to lessen the price. Inter-State dealers in all parts of the country will gladly show you why NOW is the time to buy your car. Literature and the name of our nearest dealer on request.

Inter-State Motor Company

Factory & General Offices, **Muncie, Ind.**

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START YOUR MOTOR INSTANTLY IN COLD WEATHER

AWAY in an instant, without fuss or muss, on the coldest day of winter! Starting troubles are forever banished when your car becomes equipped with an **Imperial Primer.**

Easy to install and simple in operation. Fits right on the dashboard. A gentle push of the plunger primes the motor with **vaporized, fireable** gasoline. The engine **always** starts on the first turnover. For cars with self-starters, the Primer saves the wear of batteries and the starter.

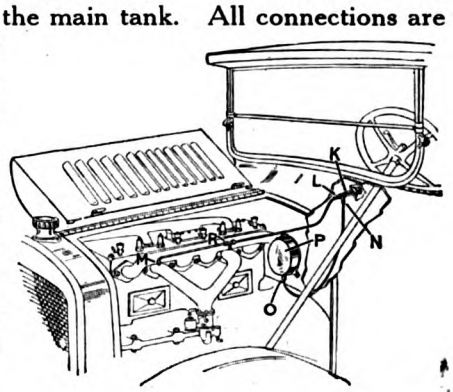
The Imperial Primer guarantees you a never-failing supply of **fireable** gasoline for your spark plugs to bite on. It puts an end to time wasted and good tempers spoiled in overcoming a winter-day "stall" by the old way of pouring raw, lifeless gasoline into the motor.

A Necessity, Not an Accessory

Imperial Primer

$6.00 Complete ***For Any Car***

Any one can install the Imperial Primer to any car, any model. The outfit consists of a small plunger pump, auxiliary tank, bolts, connections and tubing—all ready to mount on the dashboard. The auxiliary tank (P) for high test gasoline insures a quick, positive start, regardless of the grade of fuel used in the main tank. All connections are made with the celebrated Imperial Compression Couplings. No soldering, flaring or threading required with the exception of drilling and tapping the openings into the manifold.



DEALERS: Here is a splendid opportunity to make big profits on a winter motoring **necessity.** Write for details of our proposition. Our big national advertising campaign including **two** pages in the Saturday Evening Post and billboards in twelve cities, will assist in creating a demand.

Get the benefits of the big demand for the **Imperial Primer** right from the start of the cold weather season. Once installed, you will use it the year around. Try a Primer ten days at our risk. We **know** what it can do.

The Imperial Brass Manufacturing Co.

1221 West Harrison Street **Chicago, Ill.**

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NATI

TRACTORS

NATIONAL TRACTOR

NATIONAL Tractors and Tractor Attachments meet an insistent and constantly growing demand for good tractors at the lowest prices consistent with selected materials and intelligent workmanship.

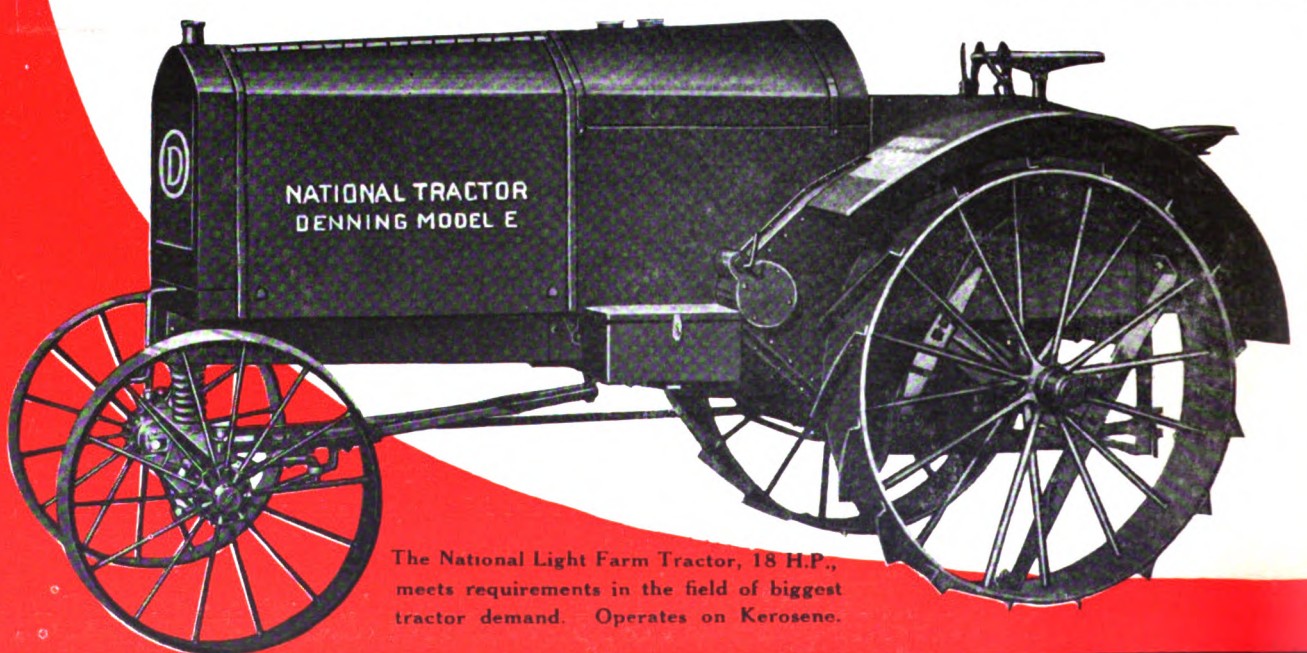
They are built with the most exacting farm service in mind —built primarily to serve, and to sell and stay sold on the merits of their service.

There is scarcely a farm of any considerable acreage that cannot employ a NATIONAL Tractor or Tractor Attachment.

With the necessity facing our Government of putting every available acre under tillage for 1918, it becomes a matter of duty rather than choice to tractorize the farm.

NATIONAL TRACTOR

29 So. La Salle St.,



The National Light Farm Tractor, 18 H.P., meets requirements in the field of biggest tractor demand. Operates on Kerosene.

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ONAL

TRACTOR ATTACHMENTS

Thousands upon thousands of tractors will be needed this year and next—more than it will be in the power of the makers to supply. Ten buyers await every tractor turned out. These are Government figures.

To become established *now* with the complete line of NATIONAL Tractors in so productive a market prophesies a certainty of success for the future. No opportunity with such vast business-building possibilities has presented itself within the last decade.

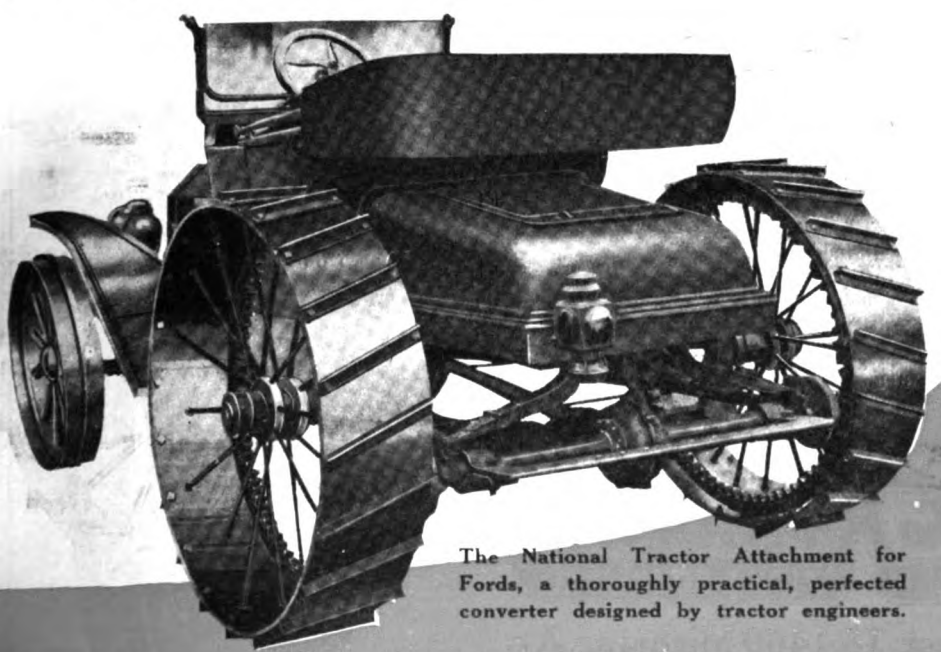
Not to investigate NATIONAL Tractors now may mean overlooking a chance you may ever after regret. Investigation costs you nothing. We invite the inquiry of interested users, State representatives, distributors and dealers.

Prompt action is recommended, as our present output should shortly be entirely contracted for.

NATIONAL TRACTOR

COMPANY, *Incorporated*

CHICAGO, U. S. A.



The National Tractor Attachment for Fords, a thoroughly practical, perfected converter designed by tractor engineers.

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Everything Else Is Going Up But

KIMBALL TIRES *Stay*

at the Same Low Kimball Prices

with

A Bargain In Every Size



With necessities of all kinds at prices higher than they have ever been before, motorists are swamping KIMBALL Tire Dealers with orders for KIMBALL Tires that are still at the same low prices. KIMBALL dealers show **savings on the first cost** that close business fast.

These tires are sold without a guarantee. Write and ask us how we do it. They are positively **not** seconds, but first class fresh casings.

All orders must be accompanied by deposit of at least 25% or no attention will be paid to same. In order to insure quick delivery CASHIER'S DRAFT on Chicago or New York Banks, Express or Money Order in part or full MUST accompany Order. Allow us first and second choice on our Bar-Grip, Button-Grip or Cord Type Tires in order to receive immediate shipment.



KIMBALL Button-Grip Tire

DEALERS Territory Is Going Fast and these Prices Are the Reason

Write Quick Before All the Best Is Gone



KIMBALL BAR-GRIP TIRE

Kimball Tires	Non-Skid	Tubes	Kimball Tires	Non-Skid	Tubes
30x3	$ 7.55	$1.90	35x4	$17.35	$3.30
30x3½	9.85	2.15	36x4	17.65	3.35
31x3½	10.30	2.20	34x4½	20.75	4.00
32x3½	11.55	2.25	35x4½	22.65	4.10
34x3½	13.35	2.35	36x4½	23.75	4.15
31x4	14.25	2.95	37x4½	26.60	4.25
32x4	14.75	3.05	36x5	27.20	4.95
33x4	15.75	3.10	37x5	27.60	5.05
34x4	16.35	3.20			

Do you want Clincher or Straight Side?

Any order you care to send us will be cheerfully accepted and handled with all the enthusiasm that is accorded the many large stock orders that come every day. It will pay you to order in large quantities on account of the saving to you in express charges.

The Kimball TIRE & RUBBER CO.

Dept. 18, 1469 Michigan Av.

CHICAGO



"Straight-Side" Type, as pictured Made also in Clincher Type

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MARATHON
SPEED
ENDURANCE

It's better business for you, all 'round, to handle a tire that helps build your own reputation among your customers.

When you recommend a tire to a man, and that tires gives him an entirely unusual service on his car, he's naturally going to come back to you for more of the same kind. Your word is as good as gold with that man. And he tells his friends, too.

When you are selling a Marathon Hand Made Tire you can talk about that tire just as though you made it with your own hands and knew just what was in it and what it would do.

We make these tires entirely by hand, so that we are absolutely sure what is in them, what they will do and to be able to back you up in whatever you say.

Frankly, now, have you ever handled a tire which you could think of in that way when you were talking to your customers?

Let us tell you a few more things about our plan of guarantee. It will be a welcome surprise to you and will open up some great, new business opportunities.

The Marathon Tire & Rubber Co.

Cuyahoga Falls, Ohio

Canadian Factory, St. Catharines, Ontario

WAREHOUSES

700 Beacon St., Boston.
549 W. 52d St., New York.
1450 S. Michigan Ave., Chicago.
3434 Locust St., St. Louis.
200 South Highland Ave, Pittsburgh.
10,213 Euclid Ave., Cleveland.
1809 Grand Ave., Kansas City.
55 Second St., San Francisco.

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THIS IS ONE OF THE BEST-KNOWN MEN IN THE AUTOMOBILE TRADE



T. M. BROOKS

"We use The Automobile Trade Directory because we find it authentic in its listings. It gives us specific information we are unable to find elsewhere, with so little trouble."

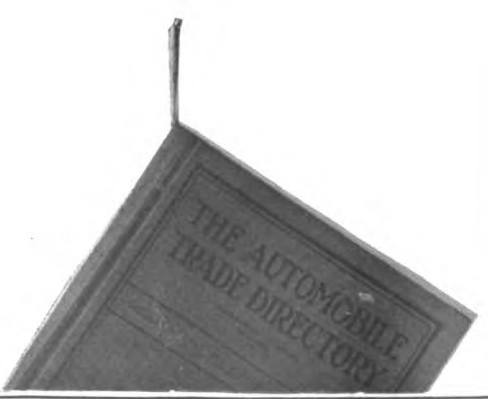
T. M. Brooks

General Manager of
THE AUTOMOBILE SUPPLY CO.,
Chicago

The "Red Book" gives specific information about every article bought or made in the industry. Suppose a customer asks for a Bougie-Mercedes Spark Plug. Turn to "Spark Plugs"—look under the trade name, and you'll find the manufacturer and all information.

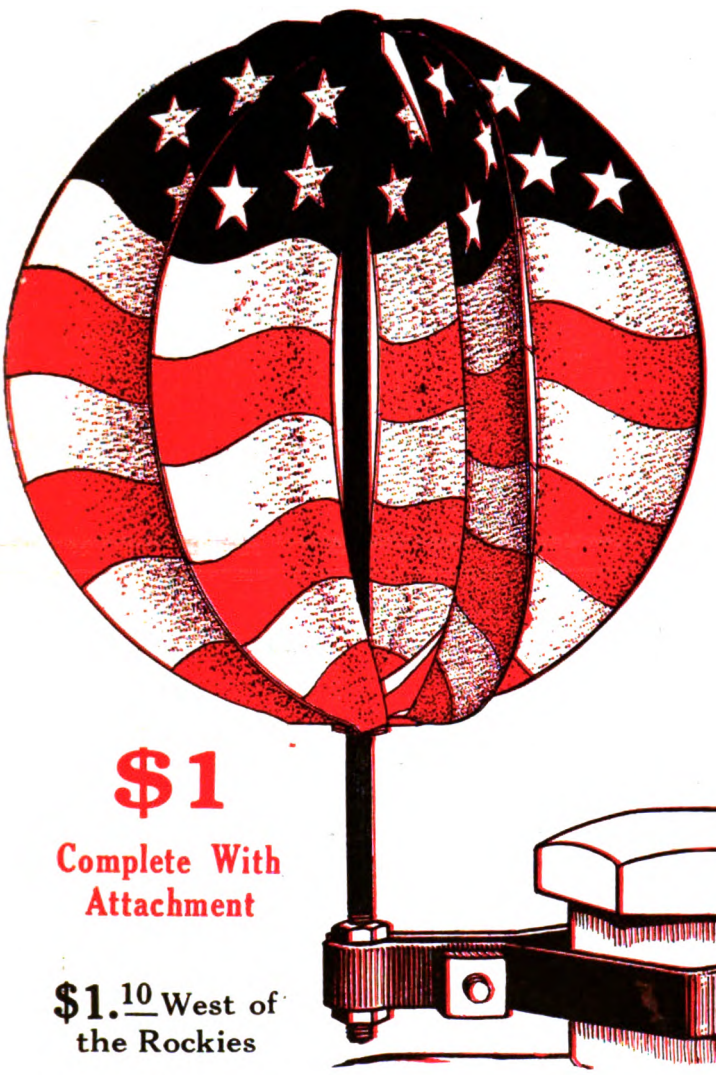
A Thousand Catalogs in One

THE AUTOMOBILE TRADE DIRECTORY
ROBERT WOLFERS, President
243 WEST 39TH STREET, NEW YORK CITY



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WHIRLING FLAGS



$1

Complete With Attachment

$1.10 West of the Rockies



Whirling Flags are fall and winter business boomers.

As closed bodies, all weather tops and limousines are put into service, fabric flags will go.

The war goes on. Patriotism increases. The second Liberty Bond sale stirs up another great wave of patriotic spirit. Car owners are going to show their colors despite rain, mud, snow, wind and bad weather. They are going to purchase an all-weather patriotic emblem.

Everyone wants something on their cars to show their patriotism. Whirling flags are the only practical, permanent ornament—made of metal, made to last.

One car in every ten in Columbus, Ohio, is equipped with them. Every one of the 600 Chicago Yellow Taxicabs is flying one. Thousands are being sold in every city.

There is a ready sale for them among YOUR customers. Simply display them. Owners buy at sight. Little sales effort is necessary. No dealer can afford to be without them.

Whirling Flags are packed in attractive, individual boxes, twelve boxes to a carton. In each carton is an attractive display stand for use in your show window or on your counter, and a supply of window signs and printed matter.

A Great Opportunity!

JOBBERS, if you are or are not handling a radiator ornament, get Whirling Flags. We want quick distribution. They sell as readily in winter as in summer. Write or wire for prices, discounts, etc.

DEALERS!

Don't wait. Be the first in your territory to show this wonderful new seller. Take advantage of the Liberty Bond Campaign to realize quick profits from this wonderful Dollar Seller. Order from your jobber. If he cannot supply you, use the attached coupon and mail today. Sample mailed prepaid upon receipt of 75c.

Fill Out Detach and This Coupon

The Prismolite Company, Department F-3 Columbus, Ohio

Gentlemen: Send on details of Dealer's Proposition, prices, etc. Enclosed find 75c, for which send me sample Whirling Flag prepaid.

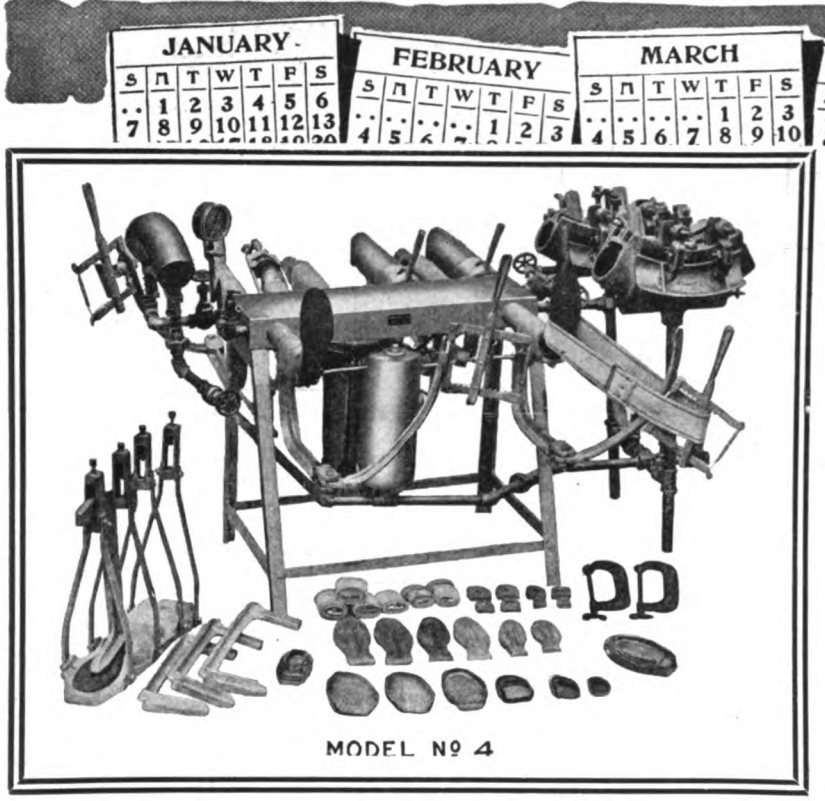
Signed.....

City..... State.....

The Prismolite Co.
Columbus, Ohio. U.S.A.

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ARTHUR Footwear



All the Business You Can Handle

Wouldn't assurance of an all year 'round business make vulcanizing so profitable for you—or for any other repairman—that it would be a foolish sacrifice of profit not to equip yourself with an outfit that made all year 'round business possible?

Arthur Vulcanizer No. 4

Consists of both rubber footwear and tire vulcanizing equipment with heater, water tank with gauge, steam gauge and pop valve.

The footwear equipment includes a steam table 10" x 31"; 8 boot and shoe forms projecting from the steam table with brackets, jacks, clamps and canvas belts to hold work in place; a set of lead forms for putting on half soles and heels; a set of sole and heel lasts and 2 pairs of half-soling forms.

The tire repair vulcanizing equipment includes 1 Arthur Sectional Tire Mold 3" to 3½"; 1 Arthur Tire Mold 4" to 5" with one pair of bead molds for each, and one medium size curing mold.

All curing surfaces are machined and polished. Shipping weight approximately 900 lbs.

Floor space required 64" x 86".

The Arthur Vulcanizing Machine No. 4 is designed especially to do away with the winter slump in the tire vulcanizing business.

Designed for All Season Business

By combining our Footwear Vulcanizing Outfit with a complete Tire Repair equipment we have eliminated seasonal business in both of these lines and are offering you the most modern, complete, compact, efficient and economical rubber goods repair outfit ever made.

No Slack Season

By equipping yourself with a No. 4 Arthur Vulcanizing Outfit you can take advantage of the growing demand for rubber footwear repairing which reaches its greatest volume in winter, when tire and tube vulcanizing is at its lowest point.

With the Arthur No. 4 Machine you have no slack season.

The Arthur Vulcanizing Machine Company

Griswold Street **Warren, Ohio**

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And Tire Vulcanizer



All the year 'round "No Winter Slump"

Only Outfit of Its Kind Made

The Arthur Outfit is the only outfit of its kind made. For the footwear repair vulcanizing machinery we hold the basic patents and are the exclusive manufacturers. For the tire repairing outfit we use our specially designed equipment, including many valuable features fully covered by patents.

Nowhere else can you get anything equal to the Arthur Machine.

Makes RELIABLE Repairs

The Arthur Outfits are built to make repairs in the most thoroughgoing manner—by the same process, in fact, by which the rubber goods are manufactured in the first place.

We thus insure absolutely reliable results. The repaired article is as good as new.

The Arthur Vulcanizer will do any kind of tire and tube repair vulcanizing—will half-sole, sole, heel and do all patching and repairing on rubber boots and shoes.

Tools and extra equipment can be secured or specially made to order at moderate cost.

Generates Its Own Steam

The machine generates its own steam and is equipped with return pipes to insure constant circulation of dry steam.

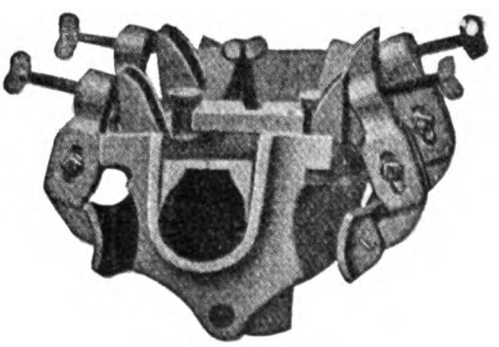
Globe valves permit shutting off steam from molds not in use.

Every Arthur Vulcanizer is thoroughly tested before it leaves the factory and is delivered ready for successful operation.

We aim to satisfy our customers. If there is any trouble we will make it right.

We Guarantee All Our Goods

Write us today for full information. It will open up for you a road to new and big profits.



The Arthur Sectional Tire Mold

A practical and valuable advance in molds for tire repair vulcanizing.

Designed to economize space and heat.

Utilizes both the inside cavity and the two outside surfaces of the mold.

By using the outside molds for small side patching you avoid subjecting the whole tire to heat.

Side molds are equipped with hanging clamps, either to hold air bags in position or to use as metal pad.

This mold has been perfected in every detail, and has given satisfaction wherever it has been used.

The Arthur Vulcanizing Machine Company

Griswold Street **Warren, Ohio**

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7TH Year And still leading

Over 100% increase in sales of

New Era "Better" Springs

Proves conclusively that the foundation of policy —and quality—established for the **original line** of replacement springs **was** and **is** right.

They Stop the Spring Breakage

More flexible—more quiet—self-lubricated for two years with oil graphite between leaves.

Unrestricted guarantee—at all points.

New Era "Better" Springs need no **selling features** of oil pockets (dust catchers), humps, nibs, etc.

Catalogued and recommended by **more jobbers** than all other lines combined.

List prices—about or same as car factories— **10 to 20% less than most lines.**

All good evidence why New Era "Better" Springs are predominant.

NEW ERA SPRING & SPECIALTY CO., Inc.

SMALLEY DANIELS, President

Main Sales Office and Factory :
GRAND RAPIDS, MICHIGAN, 1138 Hamilton Street

Chicago Factory: 717 Mather Street



Jobbers who Catalog and Stock New Era "Better" Springs

Motor Car Equipment Co., New York City.
Motor Car Equipment Co., Boston, Mass.
Motor Car Equipment Co., Newark, N. J.
Belknap Hardware Co., Louisville, Ky.
Linscott Supply Co., Boston, Mass.
I. J. Cooper Rubber Co., Dayton, Ohio.
I. J. Cooper Rubber Co., Cincinnati, Ohio.
I. J. Cooper Rubber Co., Columbus, Ohio.
I. J. Cooper Rubber Co., Indianapolis, Ind.
Julius Andrae & Sons Co., Milwaukee, Wis.
Omaha Rubber Co., Omaha, Nebr.
Janney, Semple, Hill & Co., Minneapolis, Minn.
Beals, McCarthy & Rogers, Buffalo, N. Y.
Moessinger-Marquis Hardware Co., Clinton, Iowa.
Beers Brothers Co., Oil City, Pa.
M & M Co., Cleveland, Ohio.
Foster Auto Supply Co., Denver, Colo.
Motor Accessory & Tire Co., Pueblo, Colo.
Schultz Auto Supply Co., Sioux City, Iowa.
General Tire & Rubber Co., Kansas City, Mo.
Berrodin Rubber Co., Philadelphia, Pa.
J. H. Ashdown Hardware Co., Winnipeg, Manitoba.
B. H. Edwards, Pasadena, Cal.

Cataloging and Stocking

Doherty Sheerin Co., Indianapolis, Ind.
Des Moines Auto Supply Co., Des Moines, Iowa.
W. A. L. Thompson Hardware Co., Topeka, Kans.
Auto Supply & Tire Co., Wichita, Kans.
Rice & Miller Co., Bangor, Maine.
Wetmore-Savage Co., Boston, Mass.
Edwards-Chamberlain Hardware Co., Kalamazoo, Mich.
Bay City Tire & Repair Co., Bay City, Mich.
Puritan Machine Co., Detroit, Mich.
Barker, Rose & Clinton Co., Elmira, N. Y.
Olmstead Co., Inc., Syracuse, N. Y.
Davis-Brown Electric Co., Ithaca, N. Y.
Treman, King & Co., Ithaca, N. Y.
W. H. Rowendink & Son, Rochester, N. Y.
Chapin-Owen Co., Rochester, N. Y.
Piedmont Electric Co., Asheville, N. C.
Toledo Rubber Co., Toledo, Ohio.
C. & D. Auto Supply Co., Cincinnati, Ohio.
Fen-Far Co., Cleveland, Ohio.
Supplee-Biddle Hardware Co., Philadelphia, Pa.
Gaul, Derr & Shearer Co., Philadelphia, Pa.
J. H. McCullough & Son, Philadelphia, Pa.
Waite Auto Supply Co., Providence, R. I.
Hirsig Company, Nashville, Tenn.
Woodward Carriage Co., San Antonio, Texas.
Morley-Murphy Hardware Co., Green Bay, Wis.

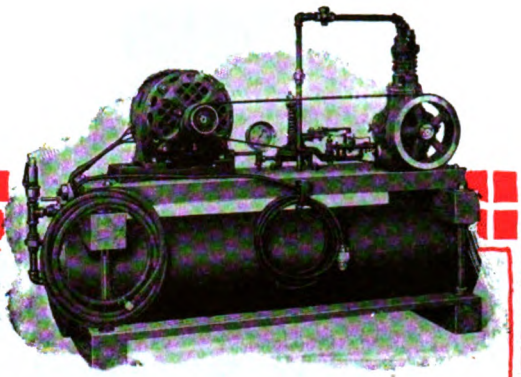
and 100 Others.



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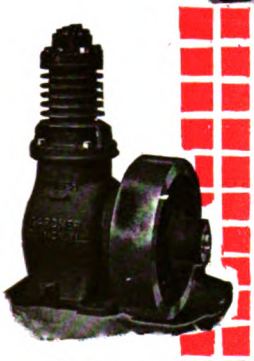
Gardner Air Wagon



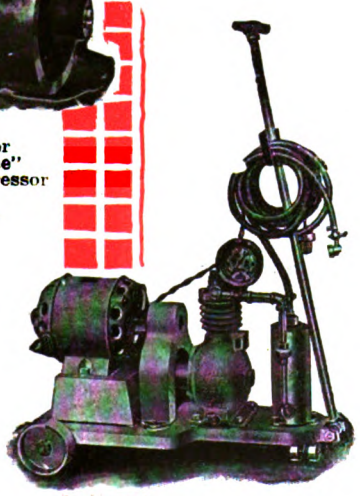
Gardner Automatic Stationary Free Air Unit

A GARDNER GARAGE PUMP





Gardner "Gee Gee" Air Compressor



Gardner "Midget" Portable Pumping Unit

"Insures you a satisfied customer."

"Gives lots of clean pure air, free from oil."

"Gives it to you quickly, without any delays, and at a very little cost. This is all a garage man wants and no pump can do more."

"Manufactured by a company having fifty years' manufacturing experience, so you will know you are getting something good when you buy a Gardner."

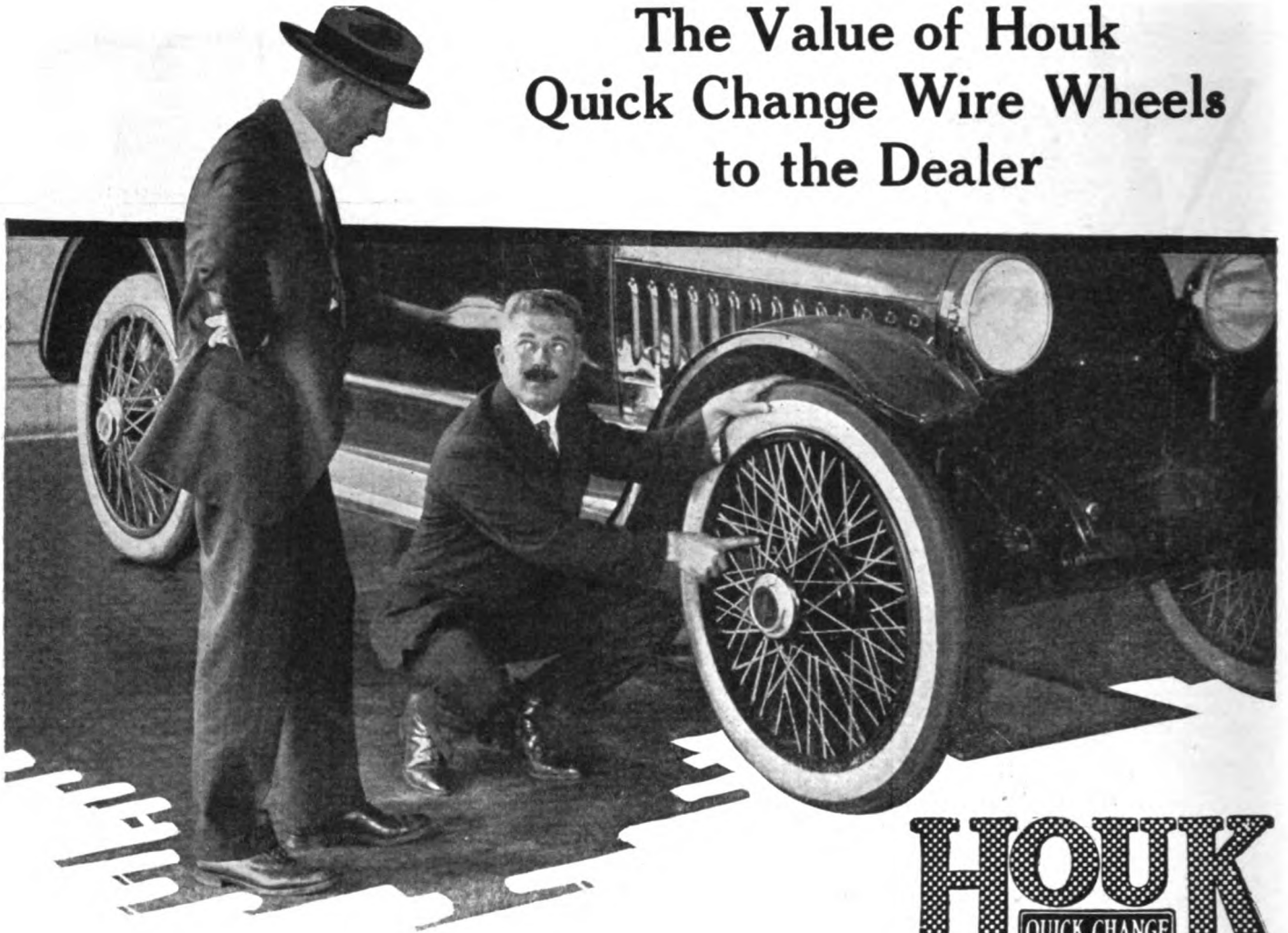
The Gardner Governor Company

144 Williamson St., Quincy, Ill.

Branches in
Chicago, New York, Philadelphia, San Francisco and Los Angeles

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The Value of Houk Quick Change Wire Wheels to the Dealer



As a genuine sales-getting factor you cannot overestimate the value of Houk Wire Wheels on the cars in your display room because they are the unquestionable choice of discriminating buyers.

Their beauty and distinctiveness of appearance and reputation for entire utility in service virtually compel admiration and inspire that desire for ownership which is the keynote of every sale.

There is an advantage in stocking Houk Wire Wheels. You become allied with the best in motor accessories, and place yourself in a position to profit by a large and rapidly growing separate order business.

We shall be glad to answer inquiries and supply information regarding our liberal proposal.

Wire Wheel Corporation of America,

Buffalo,
George W. Houk Plant
Buffalo, N. Y.

New York
Springfield Plant
Springfield, Mass.

BRANCH OFFICES AND SERVICE STATIONS

New York, 11th Avenue and 57th Street; Chicago, 23rd and Indiana Avenue; Philadelphia, 328 North Broad Street; San Francisco, 1343 Van Ness Avenue; Los Angeles, 1101 South Hill Street; Boston, 1090 Commonwealth Avenue; Pittsburgh, 600 Grant Boulevard; St. Louis, 3414 Lindell Avenue; Dallas, 2029 Commerce Street; Minneapolis, 1027 Nicollet Avenue; Richmond, 1807 West Broad Street; Buffalo, 1064 Main Street.

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Ross Gears

THE merchant or manufacturer who knows and appreciates their superior quality in design, materials and workmanship, insists upon ROSS GEARS as steering equipment on the motor trucks that he buys. ¶He has every reason to believe that the motor truck manufacturer who has been willing to pay a little more to give his customers the added assurance of safety, reliability and easy steering that ROSS GEARS guarantee, has probably given the same careful thought to the entire make-up of his truck. ¶One hundred and fifteen different makes of motor trucks, representing considerably over half the industry, are steered by ROSS GEARS.

Write for catalog and other information desired

ROSS GEAR & TOOL COMPANY
725 HEATH STREET - LAFAYETTE, INDIANA

Manufacturers of the Steering Gears that Predominate on Motor Trucks

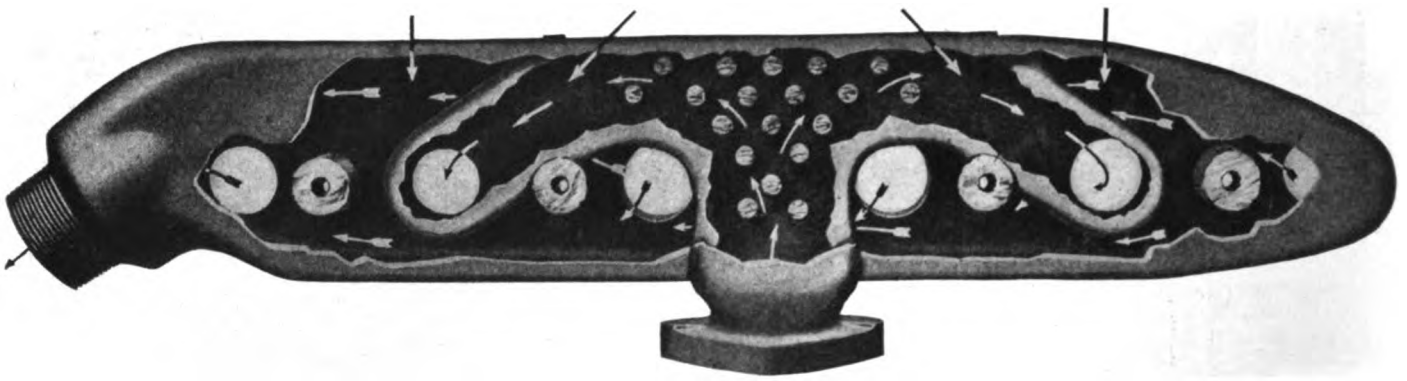


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Exhaust and Pins Assure Uniform Heat Treatment of All Fuel

This Hot-Pin Chamber Breaks Up All the Fuel—NO WASTE

Exhaust Gases Heat the Pin Chamber on All Sides



Pre-Heats Every Motor Charge—Vaporizes Perfectly—Increases Mileage Up to

50%

Shortly Pays for Itself in Fuel Saving Alone Price

$15

INCLUDING "SURE-SHOT" PRIMER

Every dealer should stock this big winter seller NOW.

Every Ford owner—and there are over 1,500,000 of them—needs and can be sold a Hot Pin Manifold.

You can guarantee every purchaser an increase in gasoline mileage from 40% to 50%—you can guarantee more power, quicker acceleration, easier starting and a better all round running car. And all this for only $15! No unprejudiced car owner can refuse to purchase equipment that WILL PAY FOR ITSELF.

Live dealers should be able to dispose of hundreds of these manifolds in the next three months.

Indispensable 12 months in the year. Due to the low grade gasoline, which is now the only kind obtainable, the Hot Pin Manifold is doubly necessary and desirable in WINTER. Hard winter starting is completely eliminated. A "sure-shot" primer (furnished with manifold) enables a start with the first turn of the crank.

The first hot blast of exhaust gas pre-heats every motor charge—ensures complete vaporization and a quick, clean-burning mixture as efficient at 10° below zero as in hottest summer weather.

Write to-day for unusually interesting sales proposition. Very liberal discounts, insuring substantial profits. State and local representatives wanted everywhere.

This article is fully guaranteed on a money-back basis, by a responsible concern.

K. B. C. COMPANY, 2015 Michigan Ave., CHICAGO

KBC

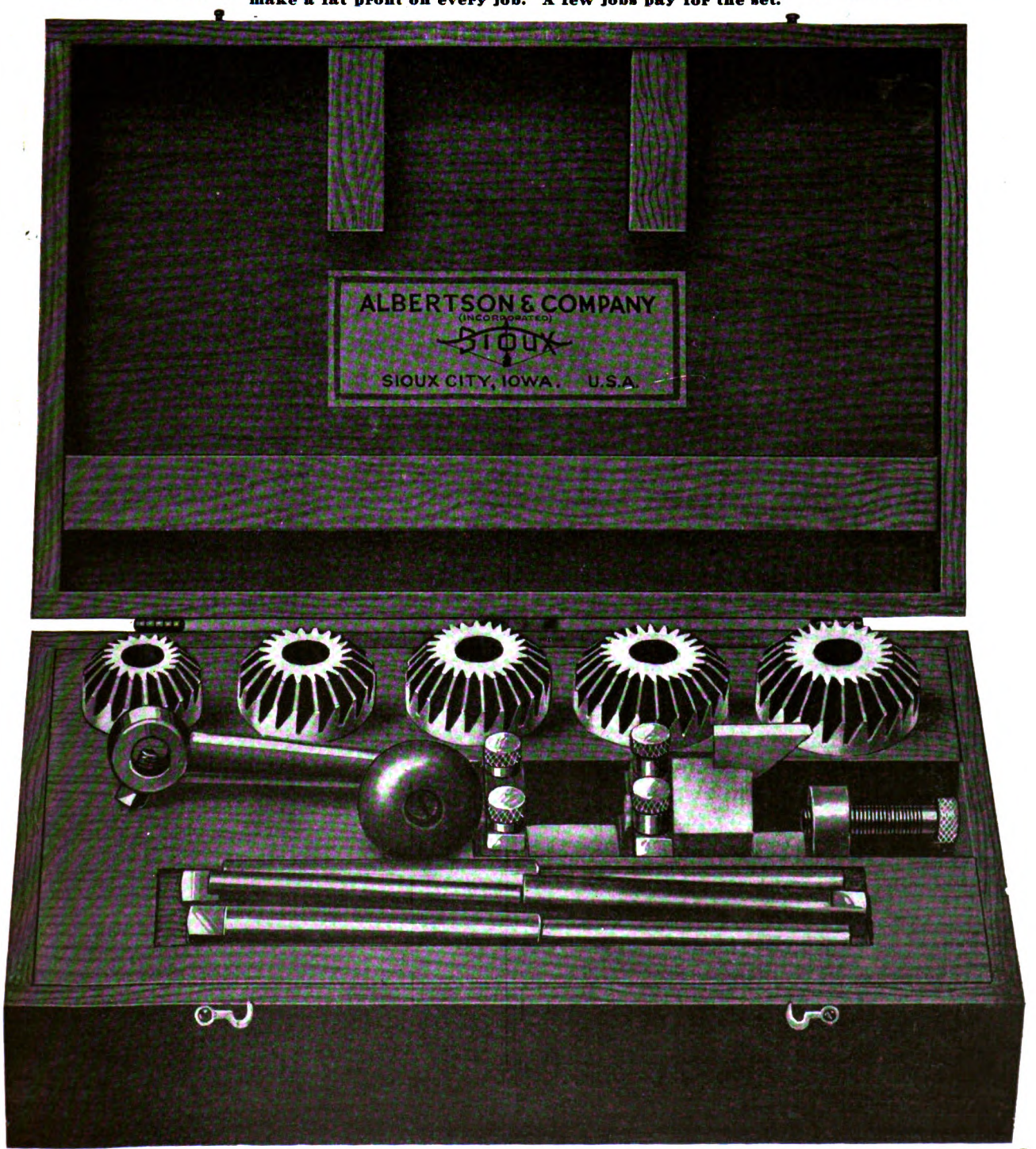
HOT PIN MANIFOLD

for FORDS

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THE SIOUX WAY

With these wonder-working Sioux Standard Valve Tools you can easily and accurately grind or cut valves and reface valve seats in one-twentieth the time required by the old method and make a fat profit on every job. A few jobs pay for the set.



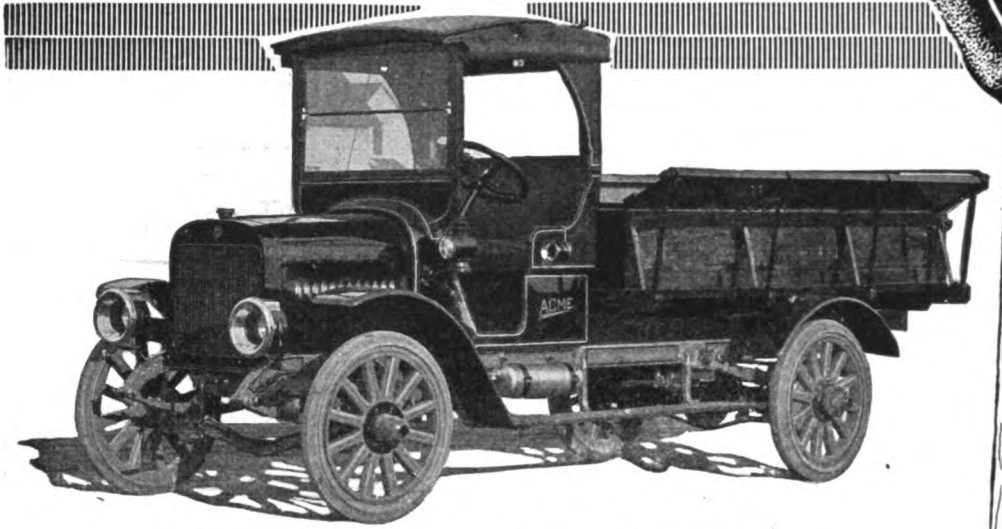
Price $22.50 (Discount to dealers). Sold by all live jobbers.

When writing advertisers please mention Motor World—It identifies you

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The Ladder to Truck Success

ACME
THE TRUCK OF PROVED UNITS



TIMKEN
CONTINENTAL
EISEMANN
RAYFIELD
PIERCE
COTTA
ROSS
ACME ENGINEERS
ACME EXPERIENCE

Advantages the ACME Offers to the Dealer

The powerful, time-tested Acme truck offers exceptional opportunity to win leadership in the truck business of your locality.

The proved units of the Acme are units that practically sell themselves—the units "prospects" are looking for—the units they demand.

Every unit in Acme construction is thoroughly proved and acknowledged supreme in the field. For instance: Timken Axles, Timken Bearings and Worm-Drive, Continental Motor, Eisemann High Tension Magneto, Rayfield Carburetor, Pierce Governor, Cotta Transmission, Ross Steering Gear and all other units equally superior.

These, plus the skill Acme Engineers and the forty years of engineering experience of Acme men, combine to build the Acme.



The great demand for the Acme Truck is not to be wondered at. Keen dealers find it is the greatest money-maker in the motor truck field.

Write Today for the Plan and Free Book ACME

CADILLAC AUTO TRUCK CO.

710 Mitchell St. **Cadillac, Mich.**

THREE ACME MODELS—One Ton, Two Ton, Three and One-Half Ton.

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586.8 MILES OVER

Chicago's Most Congested Streets in 24 Hours On High Gear



A Remarkable Feat Accomplished by a Stromberg-Equipped Stock Seven-Passenger Chalmers

March 26th, noon, a Stromberg-equipped stock Chalmers seven-passenger touring car—complete with standard body, top and full equipment—carrying four passengers—was started on a 24-hour run through the heart of Chicago's busiest traffic. 586.8 miles were traversed—with a perfect score. An exceptional feat—yes—and a *wonderful* one—because every mile was made on *high gear*. *Both first and second gears were removed* before starting. All stops, all starts were made on high gear and high gear *alone*.

The Motor Was in Operation Every Second of the Time

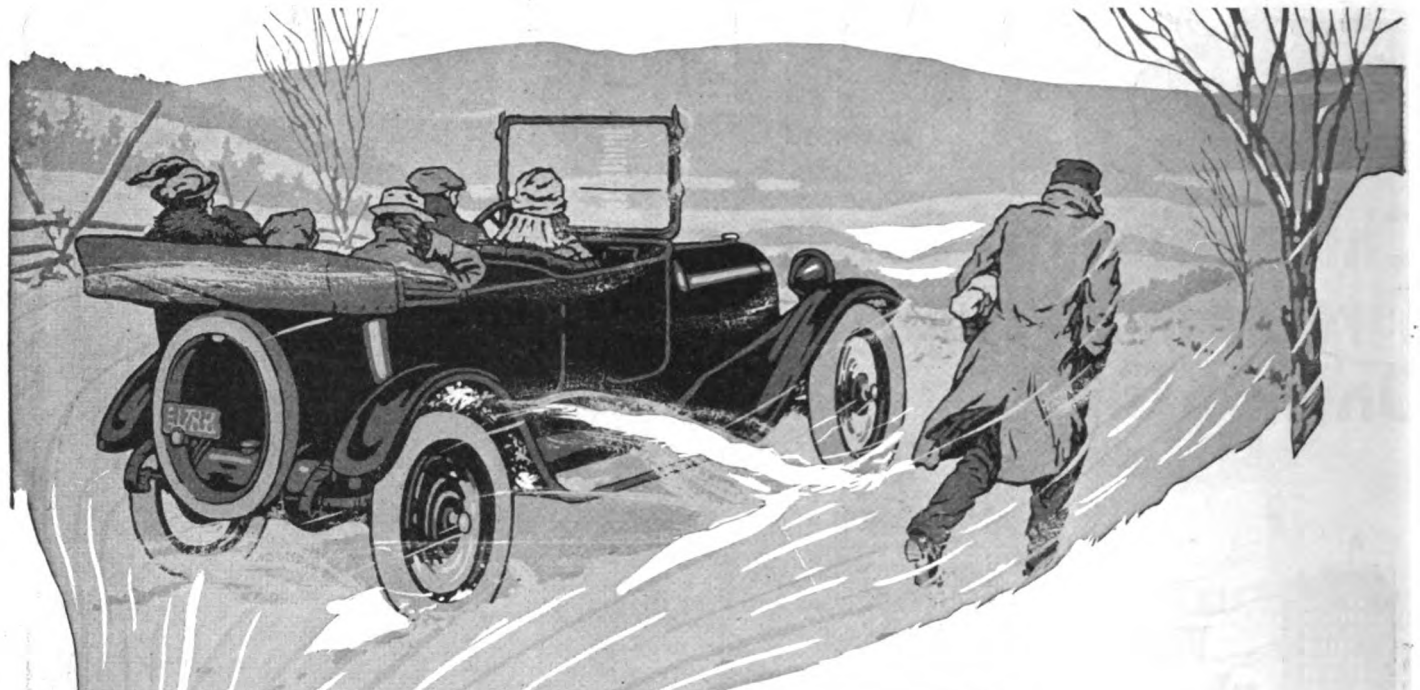
The car was kept constantly in the "thickest" of Chicago's most crowded streets—criss-crossing the loop. Weather conditions were detrimental—cold—snowy—windy. Still the engine never faltered—never failed to respond instantly. Never was there a greater display of flexibility—of dependability. And with this splendid efficiency, there was a substantial saving in fuel—an average of 14 miles on a gallon of gasoline.

Write at once for free circular matter—and money-saving facts. State name, model and year of your car.

Stromberg Motor Devices Co.
Dept. 1028, 64 E. 25th Street
Chicago

New STROMBERG Does it!
CARBURETOR

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CREW LEVICK
VICTOR "FRESH AIR" HEATER

The Crew Levick VICTOR Heater turns cold, fresh air into warm, pure air in thirty seconds. A comfortable heater for all owners of

FORDS



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The Crew Levick Victor Heater gives you a definite winter line, a Big Winter Business. Also the more "VICTORS" you sell the more people will do winter motoring. The more cars running in winter, the more accessories you will be able to sell.

Send today for special proposition on VICTOR Heaters for Ford cars.

First cost is full cost.

The Crew Levick VICTOR Heater heats up a metal drum by utilizing engine exhaust gases which otherwise would be wasted.

Ventilation with warmth.

Clean, fresh air passes around this heated drum, and enters the car as clean, warm air.

Odorless, noiseless, scorchless.

The fresh air cannot mix with exhaust gases—it comes out of the Crew Levick VICTOR Heater absolutely odorless. It is impossible for a VICTOR to scorch clothes, shoes, etc.

Easy to regulate.

The quantity of heat can be controlled to suit the cool autumn evenings, the biting cold of winter, or the chill of early spring.

Substantial.

Crew Levick VICTOR Heater is simple and sturdy. It has no flexible tubing to wear out or rattle loose, no water tube to freeze and burst.

Quickly installed.

Twenty minutes with a screw driver, a hacksaw and a wood saw. Simple instructions with every Crew Levick VICTOR Heater.

—Send for special booklet—



$5.00 Complete

A "Victor" gives comfort and health all winter to all Fords.

CREW LEVICK COMPANY

105 North Broad Street Philadelphia, U. S. A.

One of the oldest and largest producers and refiners of oils and manufacturers of petroleum products.

Refineries: Pennsylvania Paraffine Works, Bessemer Refining Co., Glade Oil Works, Seaboard Oil Works.
Producing Companies: Muir Oil Co., Pa.; Combination Oil Co. Pa.; Warren Co., Ill., Okla.; Pembrick Oil Co.; Lawrence Oil Co., Pa.
Branches: New York, Chicago, San Francisco, Baltimore, Boston.
Foreign Offices: London, England.

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A Profit Paying Tire Agency

Century-Plainfield Tires mean profits and then more profits to the dealer, because every sale means more sales and every buyer is furnished with the compelling motive to return again for more.

It's in their downright ability to negotiate extra miles that the Century-Plainfield popularity lies.

The Century-Plainfield slogan is "Quality First"—and that's the measure to which the tires are built. The miles of excess service wrapped up in each one completely justifies all the care and precaution in securing none but the best in workmanship and materials.



Century-Plainfield Tires are just simply repeaters, that's all. And it isn't hard to understand, for into their manufacture go the best materials that the world affords and these are combined and fashioned by time-seasoned experts, entirely by hand, and with the utmost care in every process.

Century-Plainfield agencies may be secured by high class dealers who act quickly. The privilege of handling this business-getting line carries with it the entire co-operation of the Century-Plainfield organization and an opportunity for generous profits such as makes for complete and continued satisfaction.

Century-Plainfield Tires

CENTURY-PLAINFIELD TIRE CO.

Century-Plainfield Tire Company, a subsidiary of the Rubber Insulated Metals corporation, Exclusive Manufacturers of the RIMCO Rubber Products by the ELCHEMCO process.

Plainfield New Jersey

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NIEHOFF SERVICE STATION OF CONTACT PARTS

DEALERS!!!

This "Cash Register of Contact Parts" FREE-



If you act at once, and be the leader in your locality by opening up a SERVICE STATION to take care of the Contact and Brush replacement business.

You will find this line the most profitable and staple of all the repair business. It will keep you from being idle during the winter months. The automobile public is looking for service on repair work of this kind. Are you adequately meeting the demand?

This is an opportunity and we will help you to make good, as we are doing with thousands throughout the country. Be one of the links in the NIEHOFF SERVICE STATION chain. Take it as a good omen that you have noticed this ad. This is a "Case of good business" you cannot afford to pass up, so tear off the coupon and mail us today.

PAUL G. NIEHOFF & COMPANY, Inc.

Metallurgical Laboratories

350 N. Clark Street **Chicago**

PAUL G. NIEHOFF & CO. INC.

PAUL G. NIEHOFF & COMPANY, INC.
350 North Clark Street, Chicago

Gentlemen:—Send me full particulars on your SERVICE STATION proposition.

Name .....

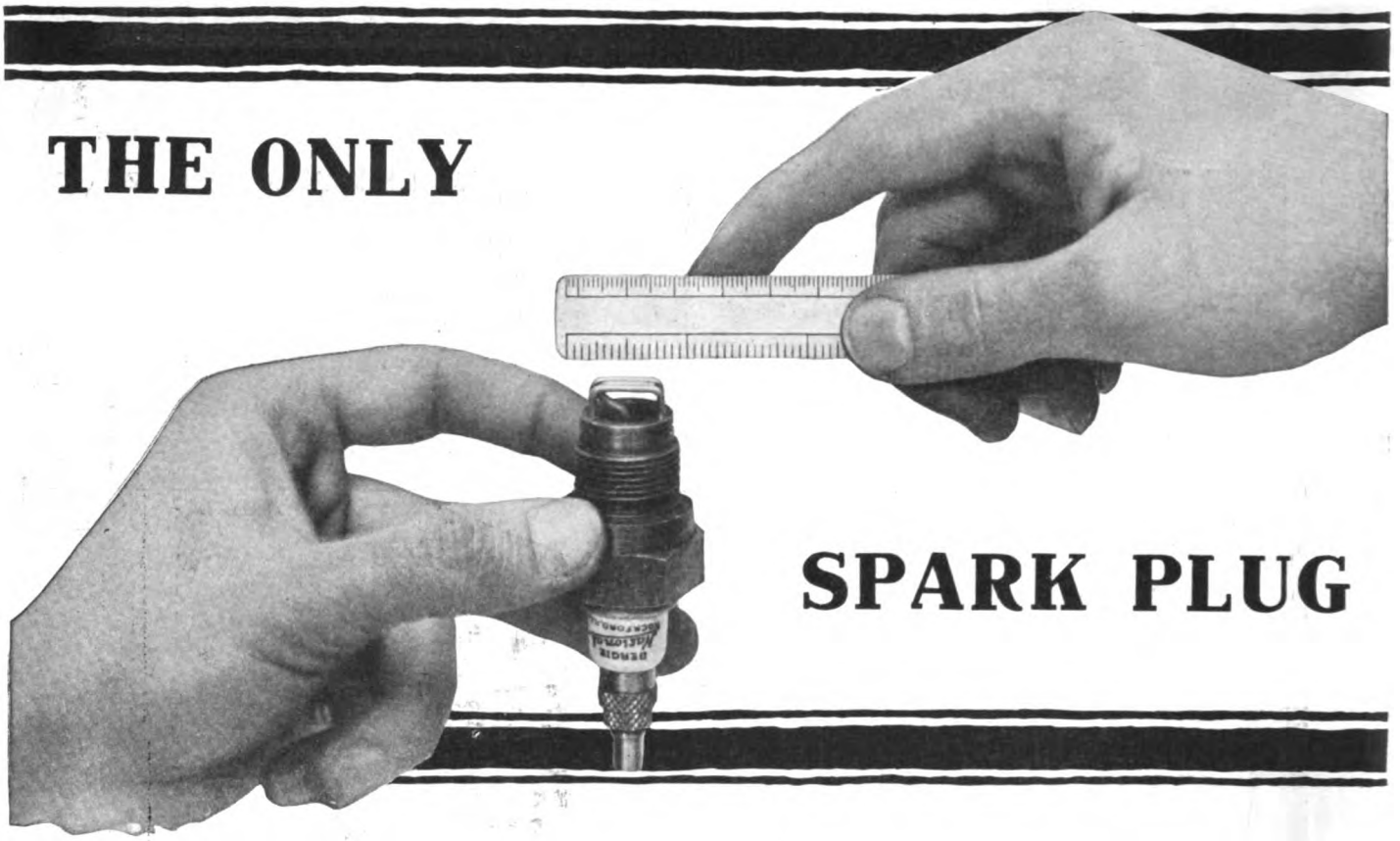
Address .....

Your jobbers' names .....

Attach coupon to business letterhead.

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THE ONLY



SPARK PLUG

WITH A ONE INCH FIRING SURFACE

$1.00 Each

For all Makes and Models of Cars



30 Days' Trial

Guaranteed for 365 Days

GUARANTORS OF ECONOMY AND MORE POWER

THEY MAKE GOOD BECAUSE MADE GOOD

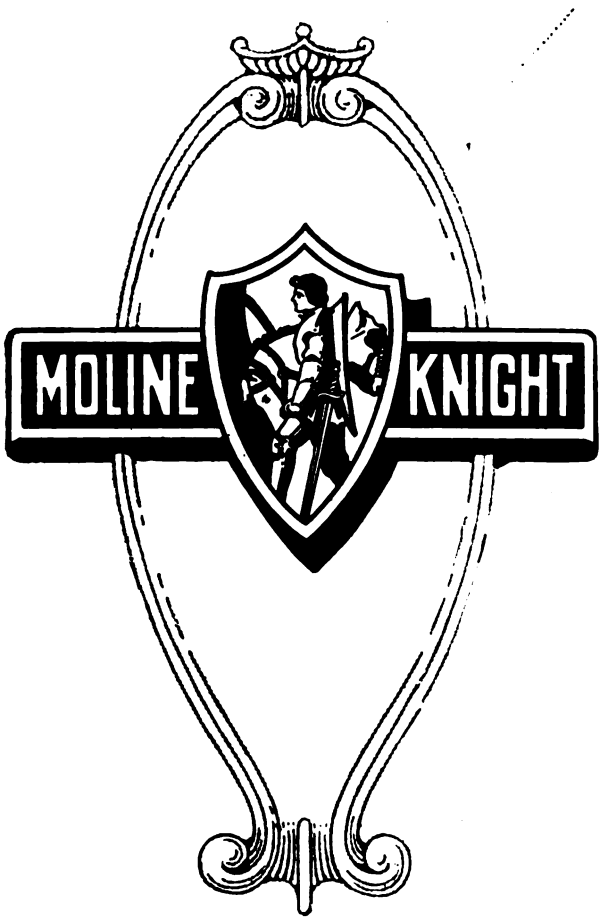
Order of Any Live Dealer

Unusually Interesting Dealers' Proposition

BERGIE NATIONAL SPARK PLUG CO.
ROCKFORD, ILLINOIS

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Such Luxury Is Found Only in Knight Motored Cars



The steady progress of the Knight-type motor in popular favor makes it essential that the buyer seriously consider a Knight motored car when selecting his next automobile. Motor-wise dealers realize this fact and capitalize it.

It is difficult to improve upon the luxury of the higher priced cars built today. Still the Moline-Knight presents a degree of quietness, smoothness, economy and durability absolutely unequaled by any car with a conventional motor, no matter what it costs.

But these are distinctly pleasure-car qualities. Consider then the proofs of efficiency and stamina furnished by the adoption of the regular Moline-Knight 50 H.P. motor for Canadian war trucks, for replacing the motors of the Fifth Avenue Bus Line in New York, and for equipping the new Chicago motor busses.

This is the motor that improves with use, the motor that carbon actually benefits, the motor that always has in reserve more power than you need, that drives a big car 20 miles on a gallon of gasoline—and never requires valve grinding.

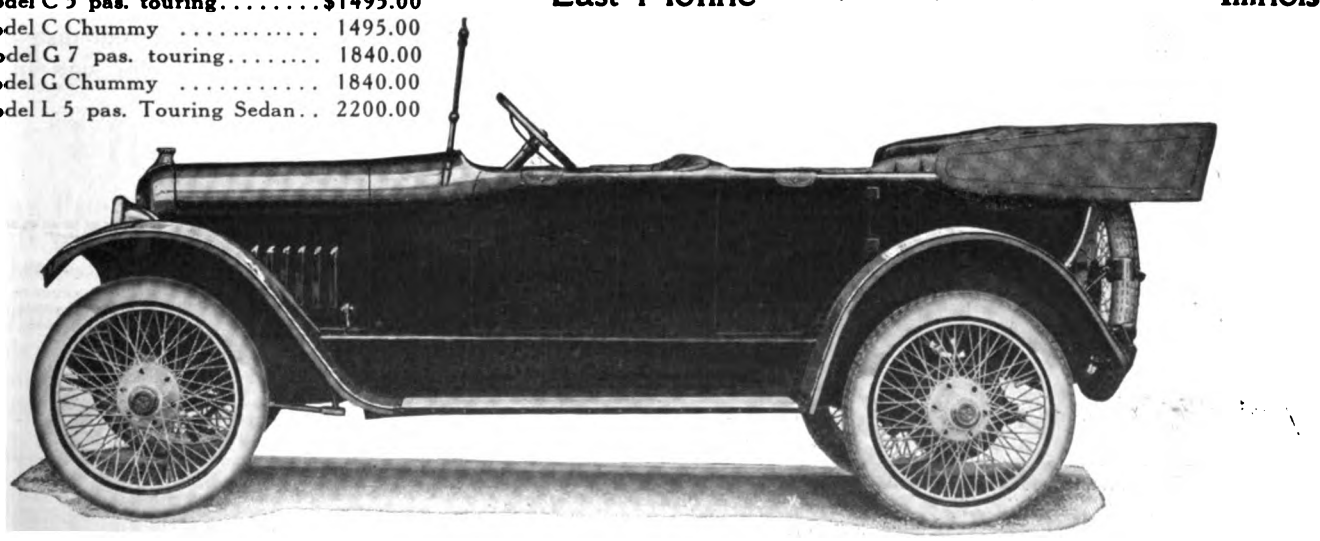
When you sell a Moline-Knight, you sell not only a wonderful motor but you sell one of the easiest riding cars ever built, offering the highest standard of chassis engineering and utmost quality in the body work.

Inquiries from qualified dealers are invited. Wire, write or call at the factory.

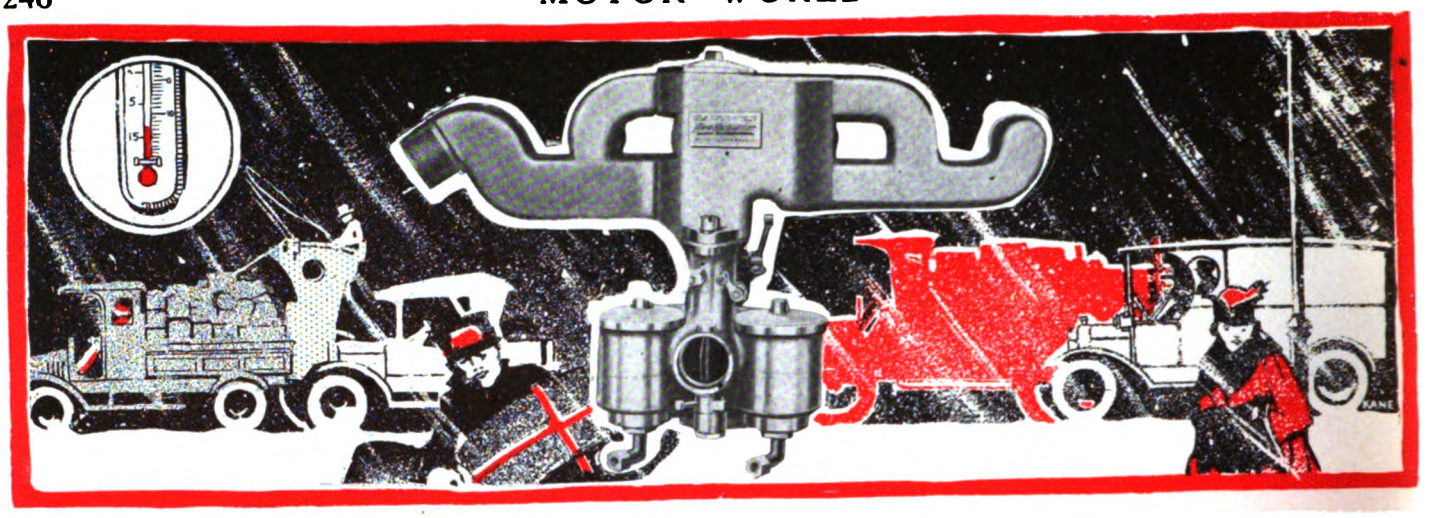
Moline Automobile Company

East Moline - - - - - Illinois

Model C 5 pas. touring	**$1495.00**
Model C Chummy	1495.00
Model G 7 pas. touring	1840.00
Model G Chummy	1840.00
Model L 5 pas. Touring Sedan	2200.00



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Big Winter Profits With This Kerosene Carburetor

The KERO-KARBURETOR is the first perfected Kerosene burning carburetor; varying temperatures have no effect on its performance—20 below or 98 in the shade makes no difference—it vaporizes and energizes Kerosene efficiently in either case. Properly vaporizing and energizing Kerosene it eliminates the necessity for high priced gasoline as a motor fuel, and we positively guarantee Ford owners: that using Kerosene, the KERO-KARBURETOR

Will Save $1.50 Every Time The Tank Is Filled

A Word To Dealers

Ford owners have been waiting for some device which would lower their cost of operation by reducing their fuel cost. Kerosene has more latent energy than gasoline, provided it is properly vaporized and heated. Hitherto, kerosene carburetors have not done this; but we positively and unreservedly guarantee that KERO-KARBURETORS will vaporize and energize kerosene to a point where it will give more miles, more power, more speed and a greater flexibility than gasoline.

We also guarantee that KERO-KARBURETORS will save Ford owners from 50% to 75% of their present fuel cost, and we allow a 30 day FREE demonstration test to prove this—the Ford owner himself to be the judge.

The KERO-KARBURETOR not being affected by zero weather is an ideal winter seller—it is a "repeater" also—one sold means many more orders. Every Ford owner will want one, and this means a good profitable winter business for live dealers.

We want one substantial dealer in every district of this country and we want to get in touch with him at once. If you want to make money during the slack winter period sell KERO-KARBURETORS. Get in touch with us immediately as we will close with some dealer in your district within the next ten days. Better clip, sign and mail the coupon *NOW*.

Kero-Karburetor

Western Carburetor Co., Manufacturers, Alma, Michigan.

MAIN OFFICES, 29 SOUTH LA SALLE STREET, CHICAGO.

Kero-Karburetor,
29 S. La Salle St., Chicago, Ill.

Please send me without expense or obligation to me, your literature explaining the Kero-Karburetor, your selling plan and your 30-day guarantee.

Name .....

Street .....

City .....

State .....

Business .....

M W.

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Accurate as a Watch
About the Size of a Watch



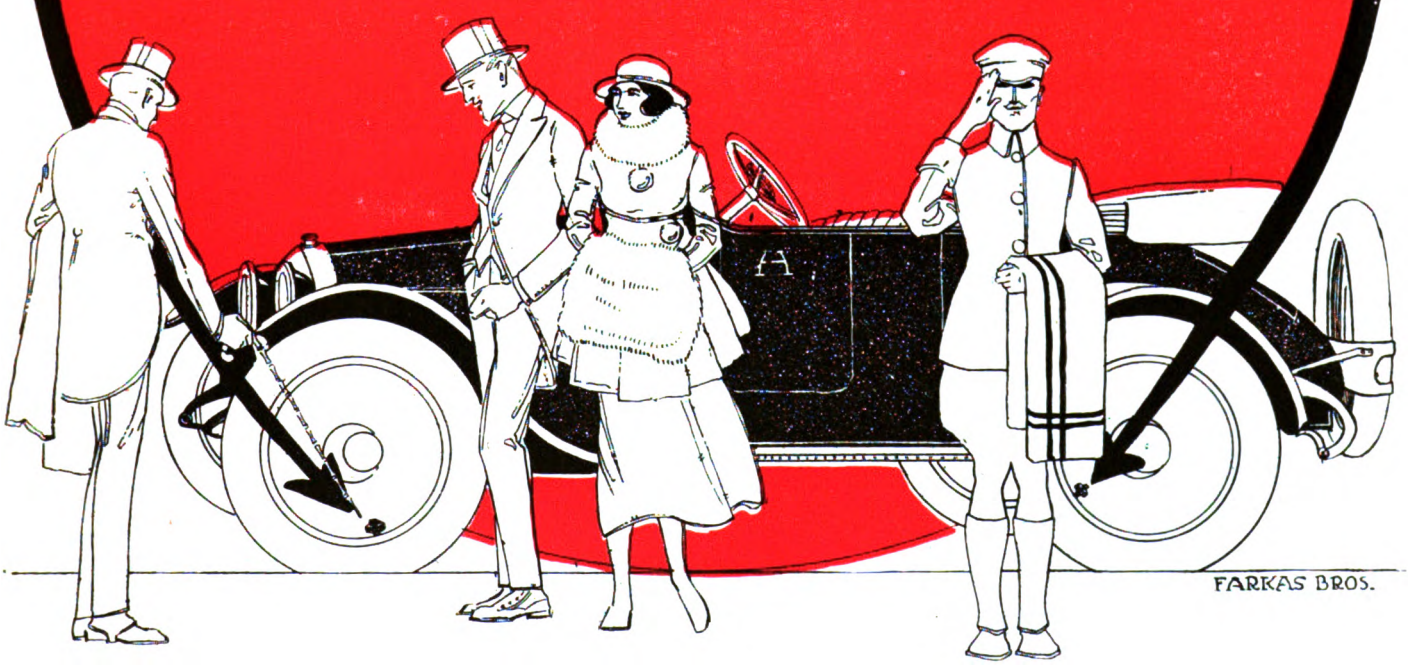
It's New

The Pneumometer

(Pronounced NU-MOM'-ETER)

Reduces Tire Expense

Constantly indicates tire pressure on a dial



The Pneumometer Increases Mileage

The Pneumometer is an indicating device, instantly attached in place of the dust cap on each wheel. Tire pressure is indicated at all times clearly on a dial, while inflating or with dust cap on. A clever item and a fast seller.

Attached in 2 minutes without tools

No tools required, you bore no holes. Fits any wheel, any car. Simply throw dust caps away and replace with Pneumometers. Begins to indicate as soon as attached.

Handsome, Durable

Strongly built to resist wear, dust and water. Handsomely finished in nickel and black enamel. Money back guarantee.

SET OF 4
$10.00

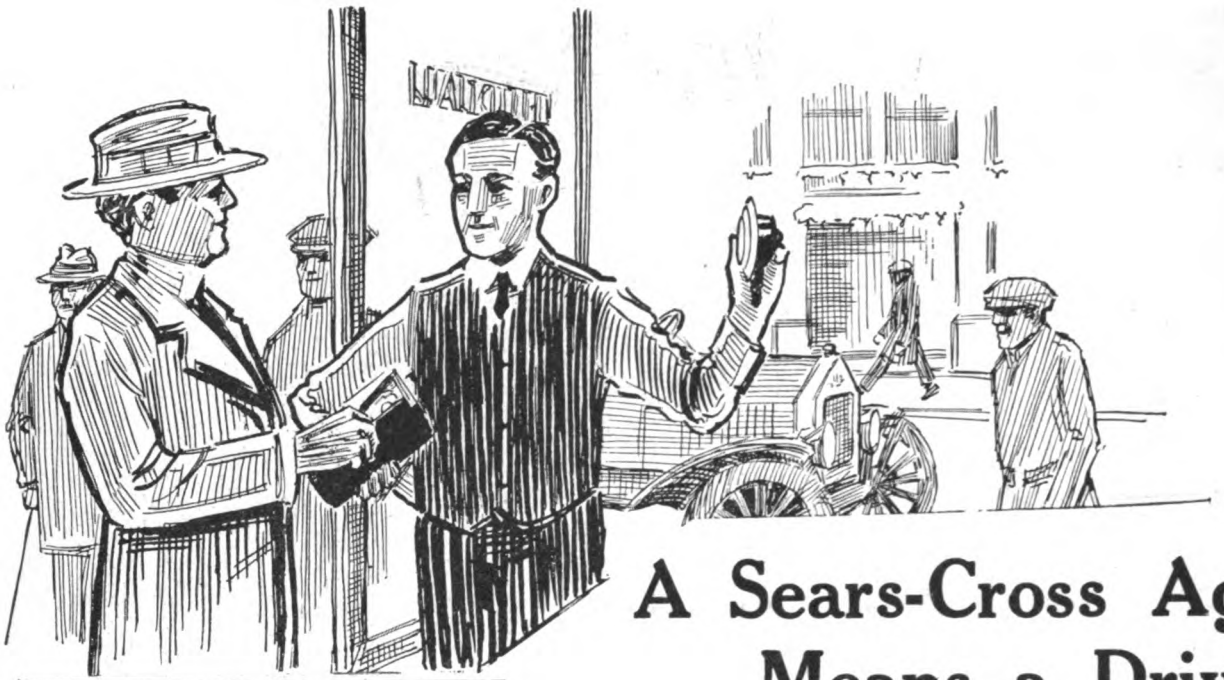
Order Sample Set—Get Our Dealers' Proposition

The Pneumometer Co.

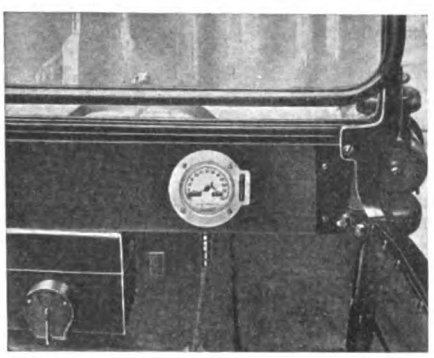
108 SOUTH LA SALLE ST., CHICAGO, U. S. A.

Liberal Discount to Dealers ***Write for Territory Now***

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A Sears-Cross Agency Means a Drive For Winter Business



Model F. C. N. Speedometer and Instrument Board for Ford Cars. **$12.00**



Model F. F. 16—Suspension Type—fits in windshield frame of Ford flush with the cowl dash. **$10.00.**



Model F. 15—for dash of Ford. Both models finished in black or bright polished nickel, **$8.00.**

A call for a speedometer for a Ford car is a call for a Sears-Cross Speedometer simply because it is the highest grade and most reliable.

It doesn't take any imagination to see the profit-getting value of a Sears-Cross display in your window or on your counter these coming winter months. The call to equip with the best and at a moderate price is mighty compelling and it finds immediate expression in the cash register.

The trio here shown tells a story of thousands of instances of greatly increased profits. Get in line—Get the Sears-Cross smile on your face.

They are beautifully finished, these instruments, and what's more, they are finely made, absolutely accurate and guaranteed against mechanical defects.

The instrument board which sells with model F.C.N. is handsomely finished in durable imitation leather. It can be placed in position in a few minutes and is adjustable for various widths of Fords.

You ought to have this outfit. It'll put pep in your winter business. Write for our generous proposition.

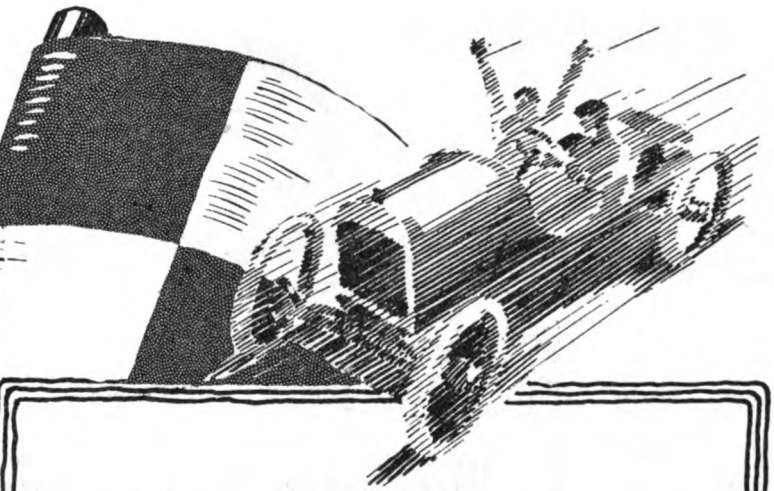
SEARS-CROSS CO.

BUSH TERMINAL, BROOKLYN, N. Y.

Branch Offices and Service Stations in all Principal Cities

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One Driver Averaged 63.13 Miles Per Hour for 20 Miles in a Ford Roof Equipped



Roof-Peugeot Type Cylinder Heads for Fords

Win Every Race

In every official race for Ford cars this summer where entered, one of the drivers with **ROOF-Peugeot Type Cylinder Heads** on his Ford **won.**

And it was common custom for others also equipped with **ROOF 16 Over-head Valves** to follow, **second, third** and **fourth.**

Besides the racing fans, hundreds of Ford owners after **more power** have stormed our factory for immediate deliveries. If you want some business that's going to keep you on the jump all winter, start installing ROOF-Peugeot Type Cylinder Heads on Fords in your territory. **Every dealer is swamped.**

Quick and easy to install. Set right in the place of the old cylinder head. Special intake manifold included **without extra cost.** Rocker arms operate from the regular cam shaft. ASK FOR OUR LIBERAL OFFER. If you want **Winter Business that pays, write for free illustrated literature and proof of profits** TODAY.

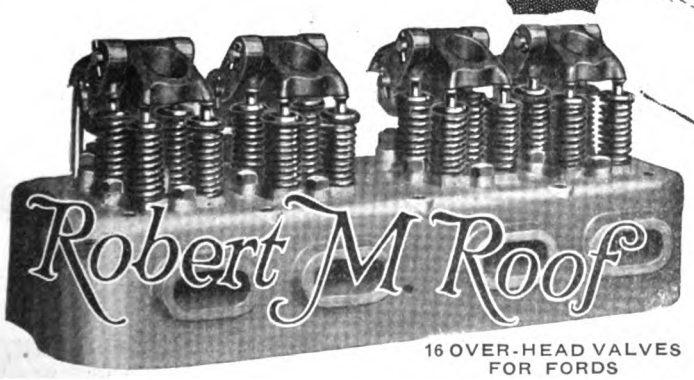
Roof Auto Specialty Co.

Robert M. Roof, M. E.

610 Meridian St., Anderson, Ind.

For Passenger and Racing Fords

All Winter Seller



Special Gear Speed Range to 87 M. P. H.
Regular Gear Speed Range Normal to 57 M. P. H.

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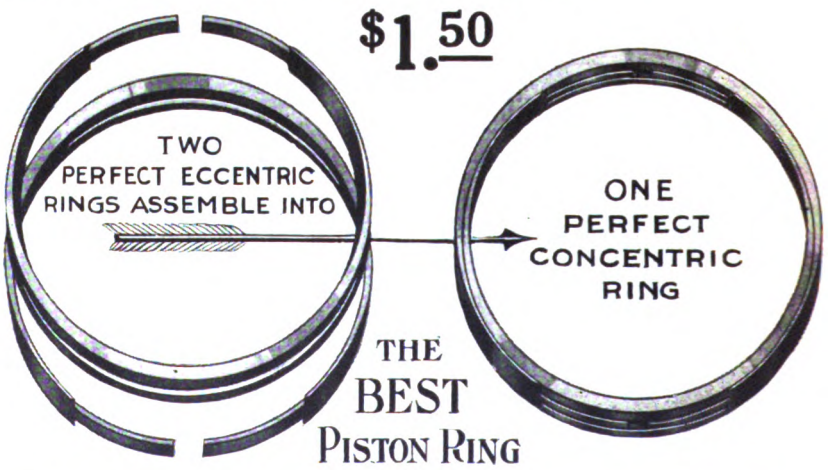
Send for Hi-Comp Hank's Order and Specification Book

HI-COMP RINGS ARE RIGHT

HI-COMP PISTON RING
"THE RING THAT MAKES THE MOTOR SING"

The Perfectly Balanced Piston Ring. The One-Priced Piston Ring. Puts Power and Pep in the motor, saves gasoline and oil. The perfect compression attained by the Hi-Comp Ring increases efficiency of carburetor and of starting system; prevents oil and soot from fouling spark plugs; prevents formation of carbon. Send for "Order and Specification Book," which lists sizes for all cars. Principal jobbers carry Hi-Comps in stock.

$1.50



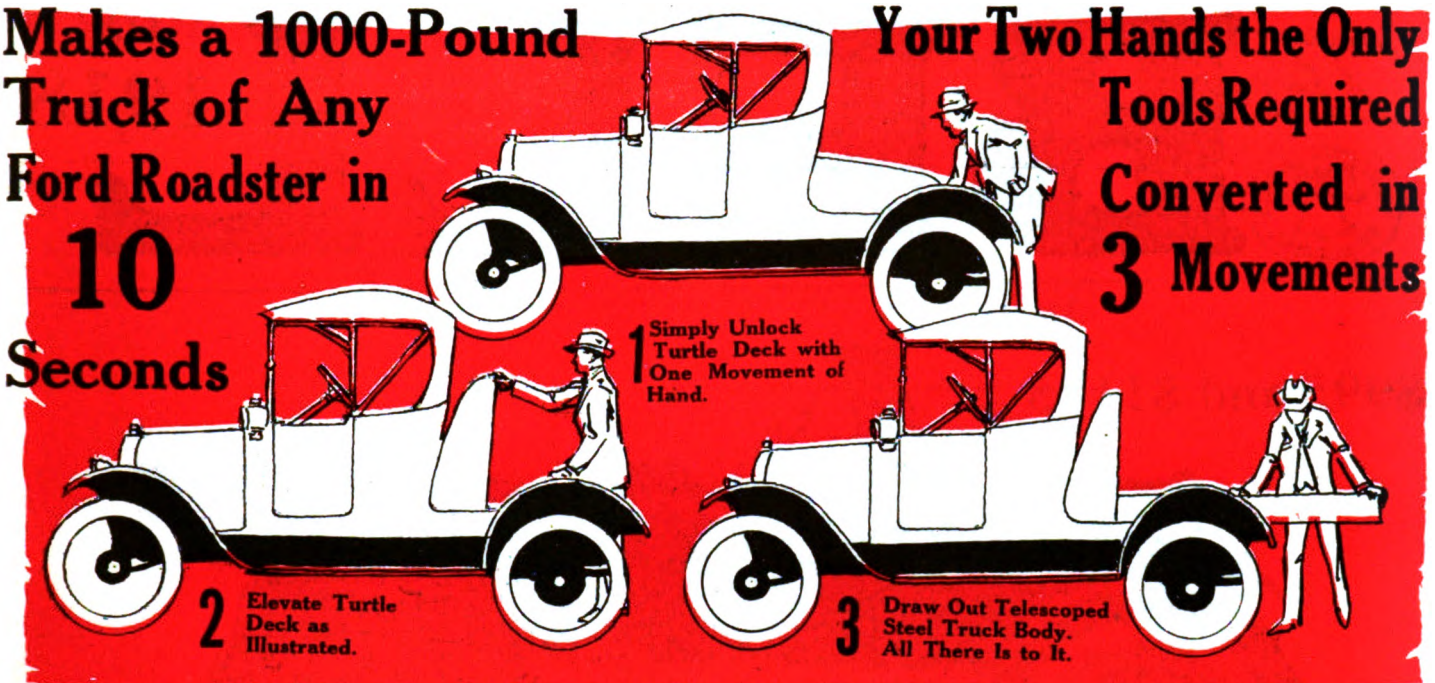
THE BEST PISTON RING

CONTINENTAL PISTON RING CO.
MEMPHIS . . . . TENN.

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Makes a 1000-Pound Truck of Any Ford Roadster in 10 Seconds

Your Two Hands the Only Tools Required Converted in 3 Movements



You don't think anything of carrying a small box or package under the turtle deck of your Ford runabout—But how about carrying a 1000-lb. capacity truck attachment there—absolutely out of sight, except when you want to use it—ready in 10 seconds to take a half-ton load?

That's exactly what you can do with the Invisible EVER-READY Truck Attachment—the handiest carrying unit ever invented for use with Ford chassis. Guaranteed to carry 1000 pounds, and to out-wear your car.

The Invisible EVER-READY Truck Attachment is large and roomy. Its inside width is 27 inches, its length adjustable from 27 inches to 5 feet. Constructed of heavy black iron. Permanently attached by anyone in about an hour. No bolts, no screws, no rattle when once in place.

Use the coupon now for free illustrated literature and complete details. Let us show you how the Invisible EVER-READY Truck Attachment can speed up your business for greater profits.

THE INVISIBLE EVER-READY TRUCK-ATTACHMENT

TRADE MARK

There is no known limit to the prospects for the Invisible EVER-READY Truck Attachment at $65. Thousands of owners of Ford cars need the services of trucks of 1000-lb. capacity and less.

The Invisible EVER-READY Truck Attachment is part of their pleasure cars, and shows only when they want to use it. It *makes two cars out of one,* and the Invisible Truck Attachment *pays for them both.*

Everyone who delivers or hauls anything of 1000 lb. or less capacity is a live prospect—farmers, salesmen, plumbers, commission men, grocers, butchers, dry goods merchants, general store keepers, parcel delivery men, rural mail carriers, contractors—all these and a long list of others you can make up in your own territory are waiting for the Invisible EVER-READY Truck Attachment for Fords. It pays out big—and the cost is low. Attractive proposition to you.

Use the coupon today. The Invisible EVER-READY Truck Attachment was a riot at the Ford Accessories Exposition last month. Big sales are going on *now. Get in touch with us at once.*

Patent Applied for

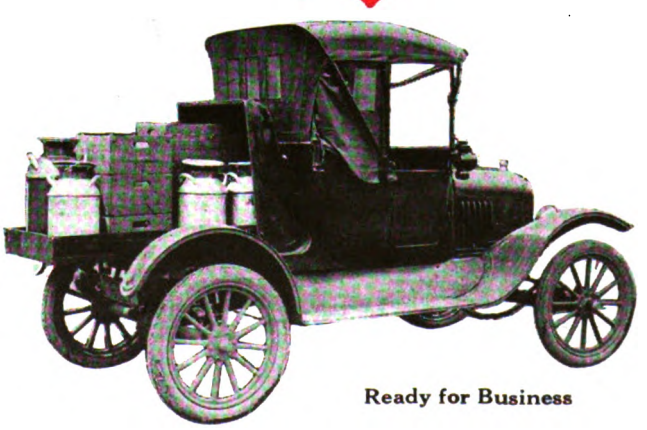
Ever-Ready Truck Company,

Not Inc.

343 S. Dearborn Street

Suite 414

CHICAGO



Ready for Business

EVER-READY TRUCK CO.
(Not Inc.)

343 S. Dearborn St., Suite 414, Chicago, Ill.

Send me complete information and free illustrated literature describing The Invisible EVER-READY Truck Attachment for Fords.

Name .....

Address .....

Business .....

Dealers inquiring for territory check here ☐

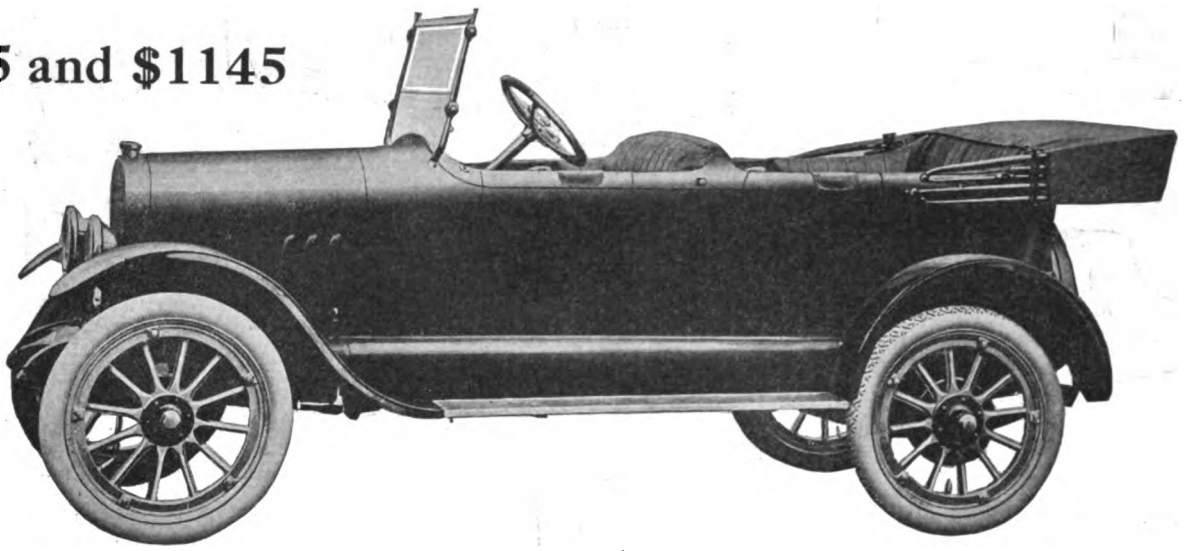
Attach this coupon to your business letterhead.

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The BELL FOR 1918

BELL MOTOR CAR CO. YORK, PA. U.S.A.

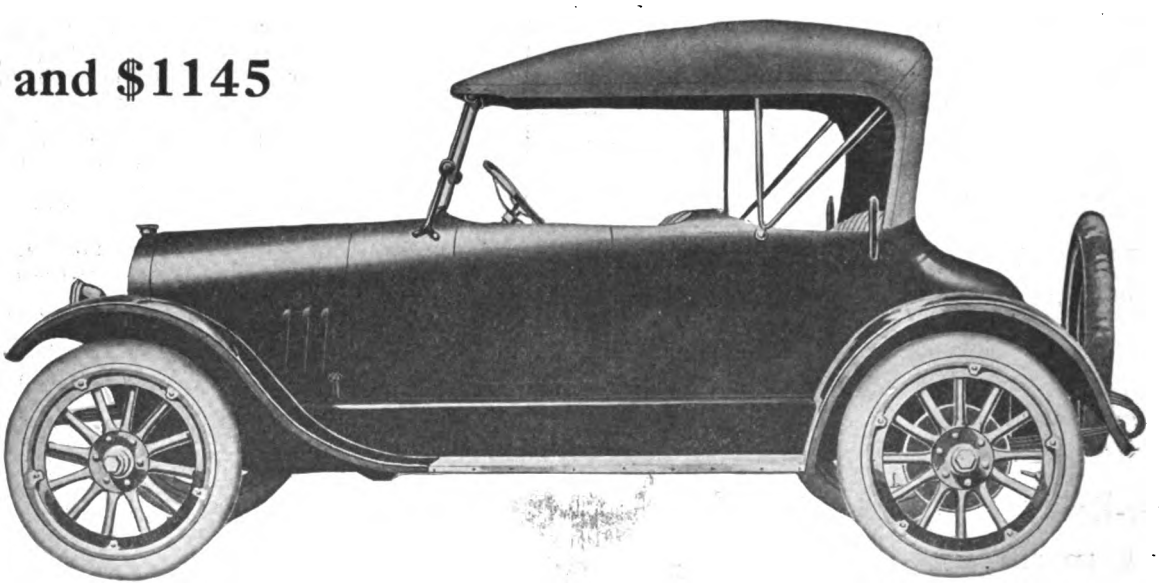
$995 and $1145



NOTE GRACEFUL DESIGN, SEATS 5 COMFORTABLY

Bell Touring Cars for 1918 are obtainable in two models, priced at $995 and $1145, F.O.B., York, Pa. The two models are alike in appearance but the mechanism units used are different.

$995 and $1145



CLUB ROADSTER, SEATS 4 COMFORTABLY

Bell Club Roadsters for 1918 are distinguished by many mechanical features and refinements seldom found in cars of the same price class. Obtainable in two models. Prices $995 and $1145. F.O.B., York, Pa.

Digitized by Google

Good Dealers Will Find the Bell Sales Plan for 1918 a Most Attractive Proposition and Well Worth Careful Consideration

BELL CARS IN QUALITY, *price, body design and equipment* exactly fit the present demand for good cars at a popular price.

FEW CARS HAVE A MORE BEAUTIFUL and lasting finish. The upholstery is wide and deep, fairly bulging with comfort. The mechanical units are of established high quality and performance. The controls are conveniently placed and of the latest design.

BOTH TOURING CAR AND CLUB CAR are of the style and dimensions most popular *right now.*

THE PRICE IS JUST FAR ENOUGH BELOW other cars of like quality to make the Bell an extremely attractive buy. *1918 models now ready for delivery.*

Write or wire at once for our Special Dealer Proposition

THE BELL MOTOR CAR CO., Inc.

YORK, PA.

Export Department: 100 Broad Street, New York City

Note Complete High Quality Equipment of Bell Touring or Roadster Special, $1145

Continental high speed motor, 4-cylinder, 3½x5, detachable L-head, helical timing gears.

Zenith Carburetor.

Firestone Tires (32x3½). **Bijur 2-unit** starting and ignition and lighting systems. Bendix drive. Willard battery.

Borg & Beck Single Dry Disc Clutch. Covert Transmission.

Artillery type wheels, second growth hickory.

114-inch wheel base.

Steering gear irreversible and adjustable for wear.

17-inch steering wheel, walnut, corrugated rim, warning signal button in center of wheel.

Ammeter, electric horn, top envelope, 10-inch electric headlights with double bulbs, taillight, dash and inspection lamp.

Tilted 2-piece, ventilating, plate glass windshield.

Gasoline mileage, about 20 miles to the gallon.

Stewart-Warner speedometer, gasoline gauge, carpet, robe and footrail, spare rim, pump, jack, etc., etc.

Upholstering in Spanish leather; special deep stuffed cushions.

Equipment of $995 touring and roadster same as Bell Special with these exceptions:

Modern motor 3¾x5¼.

A water Kent Ignition.

dyneto and unit starting system.

Multiple disc clutch running in oil.

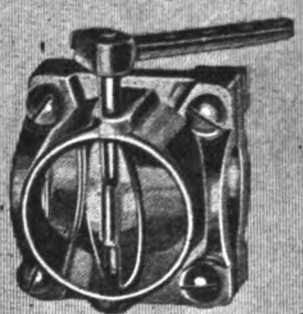
Selective transmission, 3 speeds forward, reverse.

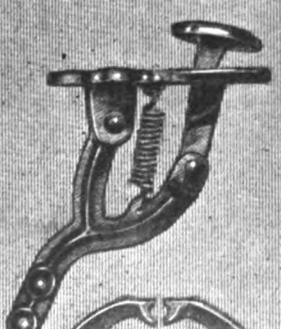
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"Ampeco" products











"AMPECO" Pistons

MAKE FORD MOTORS FLEXIBLE

A Ford motor that runs smoother, gives greater power and increased speed, without main bearing troubles, is sure to follow installation of AMPECO Pistons that are *light* and *round*.

The average weight of AMPECO Pistons is 2⅞ lbs. This will not vary one ounce.

They are *mechanically perfect and true to measurements*. They make four-cylinder Fords run like multiple-cylinder cars.

Install them at overhauling time. AMPECO installations pay. Write for free illustrated literature. All jobbers handle them.

Muffler Cut-Out: Complete with pedal, spring, pulley and 2 feet of cable.

Brake Shoes: 2-piece gray iron, exceptionally strong. Exact fit.

Wheel Puller: Extra heavy, strong, durable, accurately machined and threaded.

AMERICAN MACHINE PRODUCTS COMPANY
Marshalltown **Iowa**

Fulton Sales Co., Exclusive Sales Representatives, 910 South Michigan Blvd., Chicago, Ill.

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Even the packing of SPLITDORF PLUGS calls forth praise



Los Angeles, Cal., July 12, 1917.

The Standard Company,
Torrington, Conn.
Gentlemen:

The photograph I am enclosing was taken on our depot platform in Los Angeles following receipt of the case of spark plugs shipped by you consigned to the Splitdorf Electric Co. of this city, and shows the excellent construction of the case, it having arrived here in the best of condition.

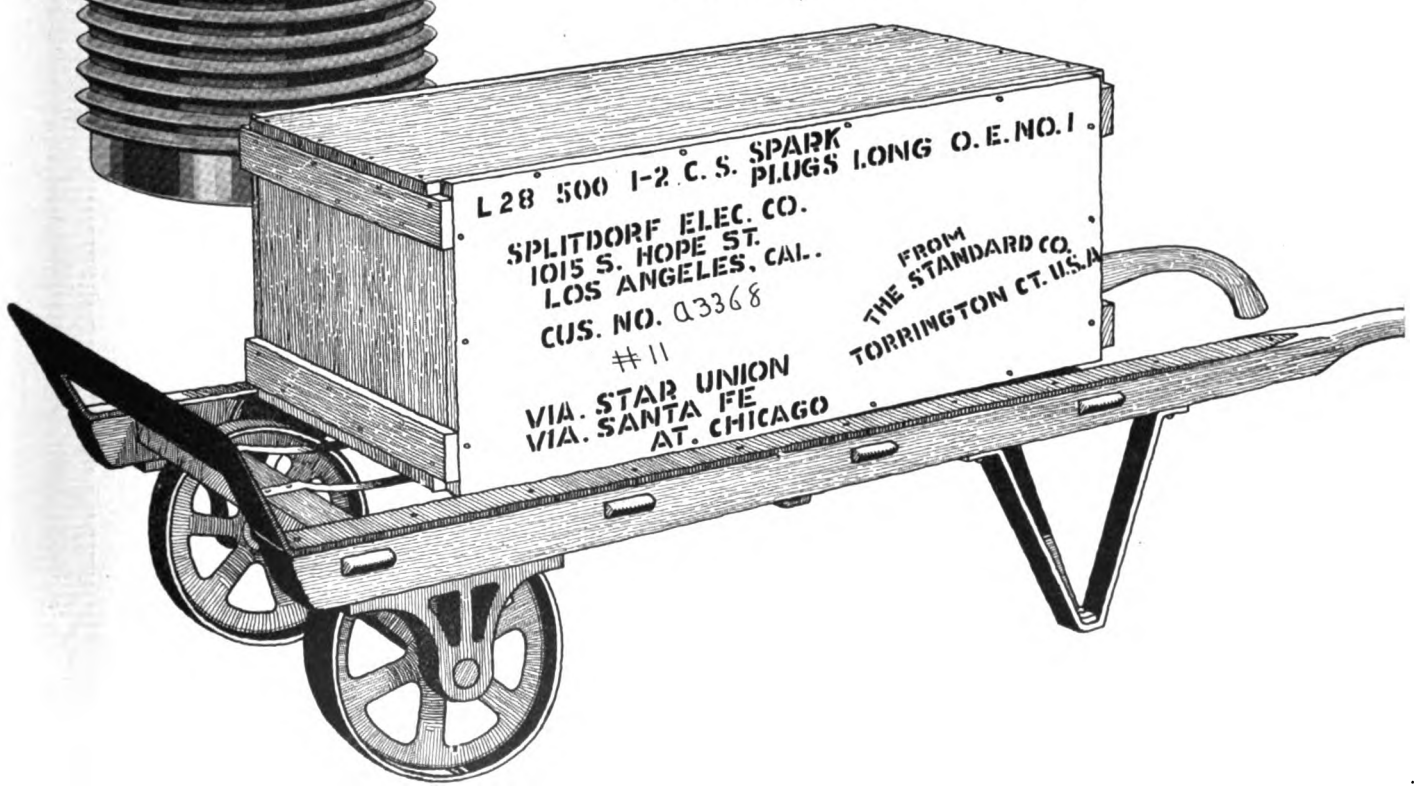
Our company has been actively engaged for some time in improving its freight hauling. In this work we find ourselves handicapped at times because of the necessity of transporting merchandise in containers that are not suitable for that which they are called upon to contain; too often does this result in loss or damage to contents. To overcome this, our first duty is constant education of our people toward prompt and proper freight handling; second, to enlist the active co-operation of our shipping friends that they will make use of first class shipping containers.

When evidence is before us of such co-operation, we take some pleasure in bringing the case to attention, and my object in writing you today is to express my appreciation of your use of such competent shipping case.

Very truly yours,

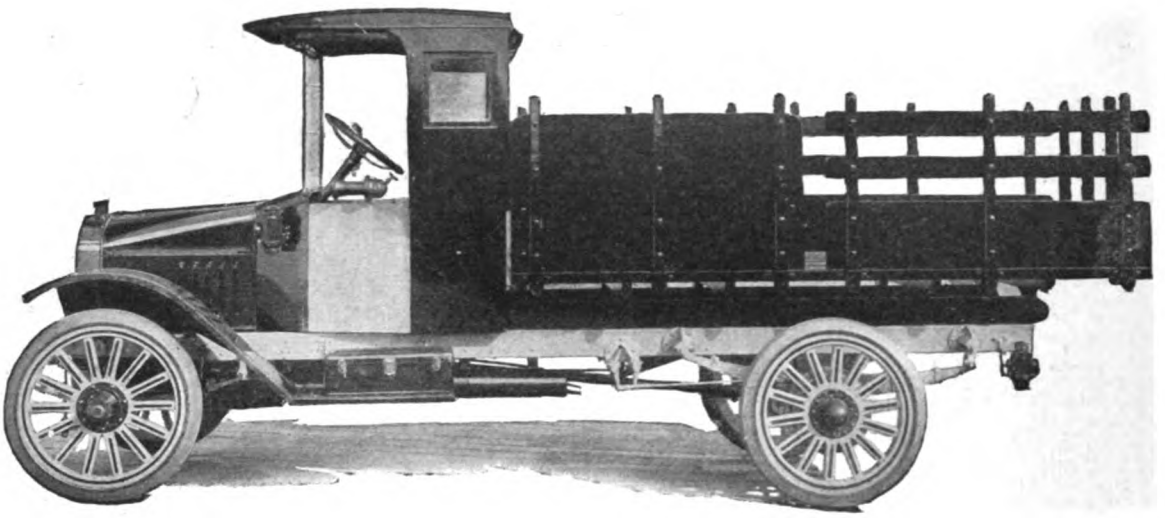
I. L. HIBBARD, Ass't. Gen'l Mgr.
The Atchison, Topeka and Santa Fe Ry. Co.

The above is a reproduction of a letter to The Standard Company, Torrington, Conn., manufacturing associates of the Splitdorf Electrical Company, Newark, N. J.



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BETHLEHEM MOTOR TRUCKS



BETHLEHEM MOTOR TRUCKS

Internal Gear Drive

Dependable Delivery

Drive.

The success of Bethlehem Motor Trucks is due mainly to the truck itself, but the drive of Bethlehem organization is behind every Bethlehem dealer.

A big national advertising campaign has aroused consumer interest, a local newspaper campaign has cashed in on that consumer interest for the individual dealer, Window Posters, Direct Advertising Material, Form Letters, Publicity Notices—in short, every short cut to more and quick sales has been supplied the Bethlehem dealer. Your territory may be open.

Write us today.

1¼ Ton Chassis	2¼ Ton Chassis	1¼ Ton Complete with Body and Top	2¼ Ton Complete with Body and Top
$1245	$1775	$1305	$1850

F. O. B. ALLENTOWN

BETHLEHEM MOTORS CORP'N

ALLENTOWN, PA.

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MILLER & HALL, ARCHITECTS

Put temptation in the motorist's way. He cannot resist the attraction of a garage trimmed with clean, white, sparkling MIDLAND TERRA COTTA

It PAYS to build with MIDLAND TERRA COTTA

MIDLAND TERRA COTTA CO.

1515 LUMBER EXCHANGE BUILDING CHICAGO, ILLINOIS

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POVASCO

RADIATOR FILLER CAPS



TO THE WIDE-AWAKE DEALER AND GARAGEMAN

POVASCO Radiator Filler Caps have made a rapid and complete success with car manufacturers, jobbers, dealers and car owners. Their quality is apparent at a glance, and constant use proves their exceptional durability. From the moment of our first announcement their selling success has been a certainty. Every jobber should illustrate them in his catalogue. It will mean a lot more business that would otherwise go elsewhere.

Winter and its rapid temperature changes are hard on the ordinary, hard rubber cap. Get this winter business by carrying a stock of POVASCOS.

You have an unusually good proposition in **POVASCO** Filler Caps.

Neatly packed in individual boxes, each box plainly marked on the outside with a label telling just what cars that certain cap will fit.

Our No. 3 Cap fits 18 different cars, and our No. 8 Cap fits 19 different cars that we know of. Therefore, if you purchase a sample dozen or half gross of our caps you could fit all the cars in your town or territory.

POVASCO Caps are molded by our special process, from our own composition, and are far superior to hard rubber caps. They will not discolor or break and possess a brilliant lustre which is **permanent** and very attractive. They contain no rubber or rubber composition whatsoever.

Write at once, either to us or to your nearest jobber for discounts. Do not go to sleep on this—it is a real, live business opportunity.

Special Notice

POVASCO Radiator Filler Caps are fully protected by patent No. 1,134,890, granted April 6, 1915, to Mr. H. S. Morgan, Secretary of the Pouvailsmith Corporation.

We here serve notice that we shall protect our patent rights to the utmost limits against any and all infringers.

POUVAILSMITH CORPORATION
Poughkeepsie, New York

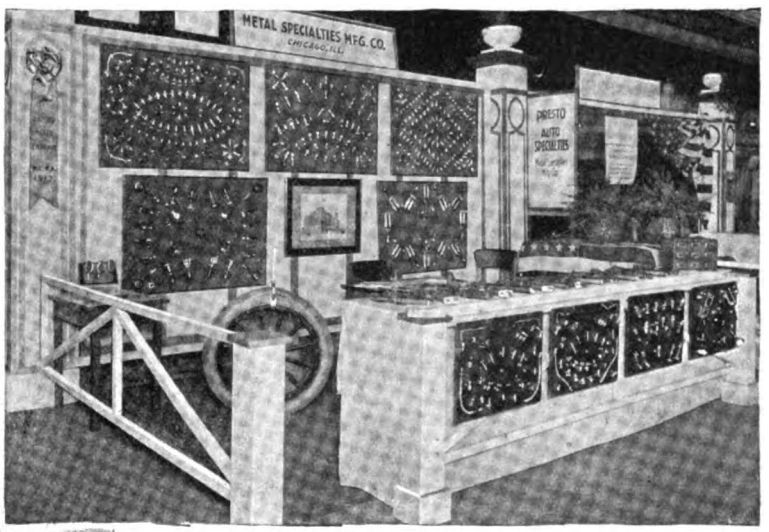
Makes of Cars and Their Cap Numbers

Abbott-Detroit	3	Krit	6
Allen	2, 8	Locomobile	5
American Motors	12	Lozier	10
Auburn	3	McFarlan	5
Barley	1	Madison	12
Bartholomew	8	Malcolm	6
Bell Motor	13	Martin Carriage	13
Bour-Davis	12	Maxwell	16
Buick	9	Mercer	18
Cadillac	4	Meteor	17
Carter Car	8	Michigan	8
Case	3	Mitchell	3
Chalmers (Model 17)	14	Moline	8
Chalmers 1912 or earlier	3	Moline Plow Tractor	1
Chalmers 1915-16-17	20	Moon	4, 6
Chandler	5	Oakland	5
Chevrolet Baby Grand	8, 12	Oakland, 1916-Little Six	1
Chevrolet Little Six	1	Oldsmobile	5
Chevrolet Royal Mail	8, 12	Oldsmobile 1916	14
Chevrolet (490)	13, 16	Paige 1914 or earlier	1
Cole	5	Paige 1915	5
Crawford	3	Paige 1915 and 1916	17
Cunningham	3	Patterson	8
Danch Tractor	1	Pierce-Arrow	3, 5
Denby	1	Pilot	6
Detroiter	17	Reo	19
Diamond T Truck	8	Republic Truck	8
Dodge	2	Rock Hill Motor Buggy	12
Dort	8	Ross Eight (All Models)	17
Empire	1	Saxon	3
Fisher-Magic	3	Scripps	1
Ford	11	Service Truck	8
Gilde	7	Shaw Taxicab	8
Grant	8	Speedwell	3
Haynes	3	Standard Truck	8
Henderson	5	States Motor	13
Herreshoff	6	Stearns-Knight 4 cylinder	5
Hudson 6-40	4, 6	Stearns-Knight 8 cylinder	8
Hupp 1915 and after	7	Stevens-Duryea	5
Imperial	3	Studebaker	2
Indiana Truck	8	Stutz	3
Interstate	8	Sun	12
Jackson	6, 8	Velie 1916	8
Jeffrey 4 cylinder	17	Velie 1914 and 1915	2
Jeffrey Truck	17	Westcott	3
Jeffrey 1916 and 1917	15	White	3
Kentucky Wagon	13	Winton	3
King	1, 12		
Kissel Kar	5		

List Prices

Nos. 11, 13 and 16, $6.00 per doz.
Nos. 1, 2, 3, 5, 6, 7, 8, 9, 10, 12, 14, 15, 17 and 19, $9.00 per doz.
Nos. 4, 18 and 20, $12.00 per doz.

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WINTER BUSINESS COLD WEATHER MADE PROFITABLE

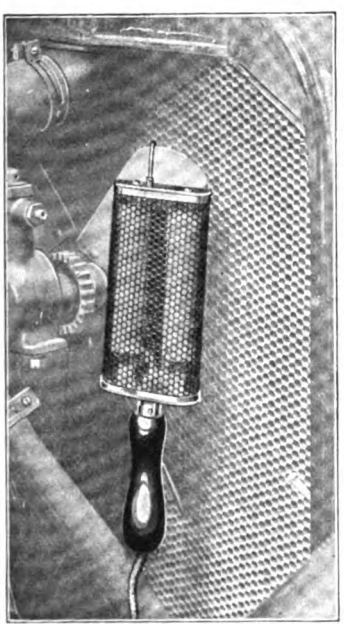
the *Presto* Blue-Ribbon Booth at the National Exposition of Accessories

Jobbers and dealers know the PRESTO line. They know where to come for Winter Accessories that sell. That's why, at the National Exposition of Accessories—just closed at the Coliseum, Chicago—the first sale at the show was a PRESTO sale, totaling $1,000, taken half an hour after the doors opened the first day. This and subsequent big sales are a barometer for winter business you can well afford to follow. PRESTO Specialties on your shelves move, leaving liberal margins of profit behind.



NOTE THE NEW HANDLE AND SUSPENSION HOOK

For All Makes of Cars



The Presto Electric Heater in Action Near the Radiator

—and the Blue Ribbon Seller of Them All

The *Presto* Electric Heater for Use Under the Hood

—with two new added conveniences, the new handle, that enables the user to move it from place to place while still hot, and the new hook, operating on a swivel, that allows the heater to be hung practically anywhere under the hood.

The PRESTO Electric Heater is a winter seller that leads. A good start has already been made toward last winter's big record of sales. Dealers and jobbers can break this record many times while cold weather is here.

The PRESTO Electric Heater operates by connection with the nearest electric light socket. Serves better than a garage heater, because it delivers the heat directly under the hood, where most needed. Eliminates starting difficulties winter mornings. Consumes small amount of current. Sold, with the rest of the popular PRESTO Line, by leading jobbers and dealers everywhere.

METAL SPECIALTIES MFG. CO., Inc.

338-352 N. Kedzie Ave., - - Chicago

Eastern Branch: 16-24 W. 61st St., New York City
Western Branch: 149 New Montgomery St., San Francisco, Cal.

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When you think of Asbestos you think of

Johns-Manville

NON-BURN ASBESTOS BRAKE LINING

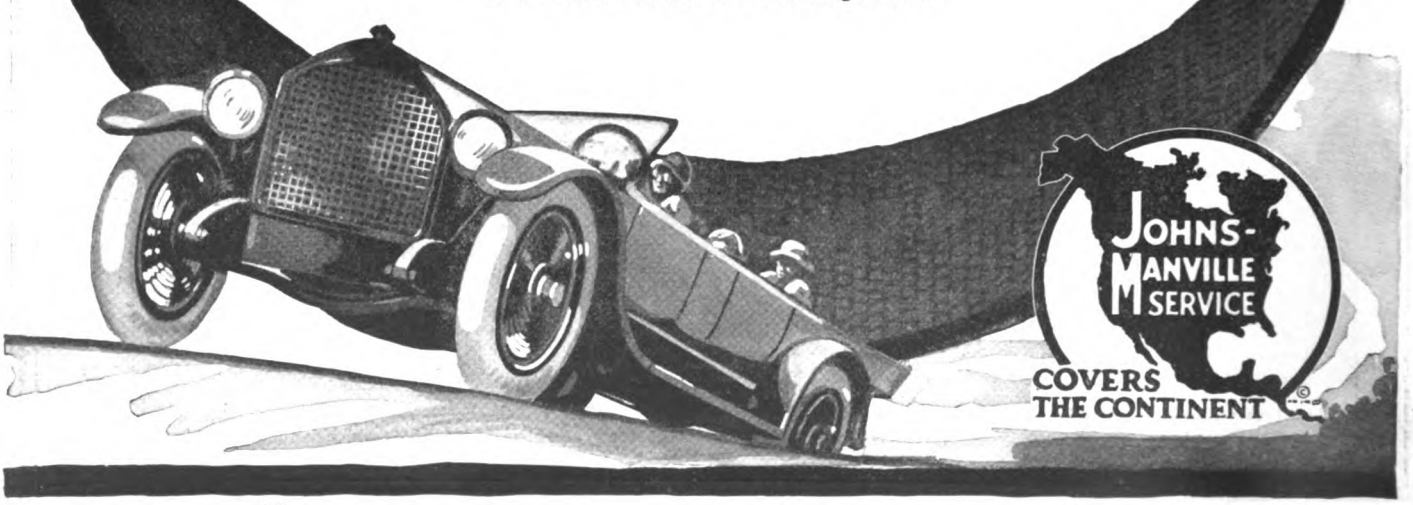
FROM the time Johns-Manville ASBESTOS is torn from the earth as a nugget of fibres till it reaches you as NON-BURN, it is a Johns-Manville product.

And into NON-BURN goes only the finest selection of special stock, taken from our own mines —no better asbestos fibre exists.

You can't buy longer brake lining service, more safety, more satisfaction, than in this lining made at Asbestos Headquarters by Johns-Manville.

To the Trade—Ask for details.

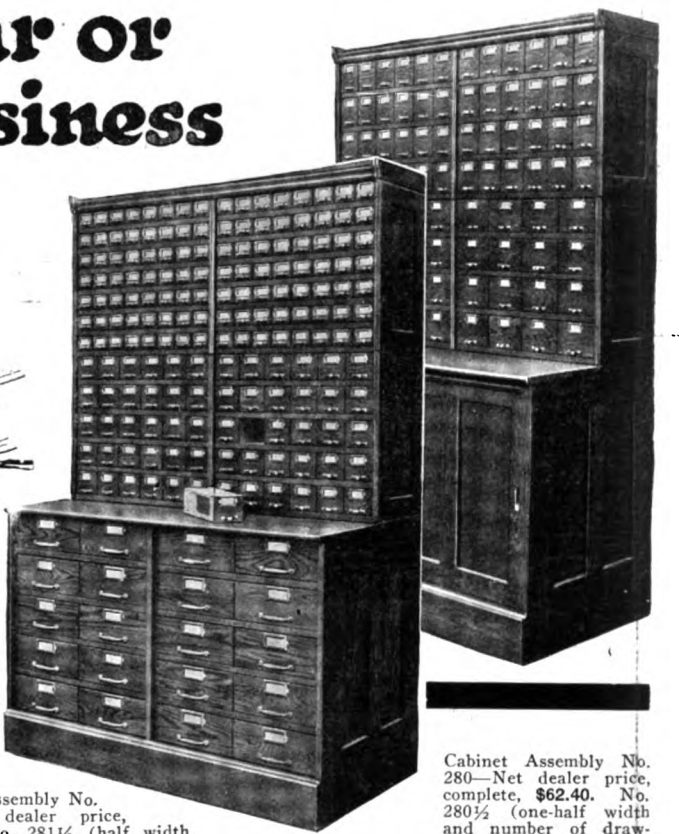
H. W. JOHNS-MANVILLE CO.
NEW YORK CITY
10 Factories—Branches in 54 Large Cities



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Organization is Everything in war or in business





Organize your business. Keep your stock in a clean, orderly manner with Stevens Service Cabinets.

Cabinet Assembly No. 281—Net dealer price, **$93.40.** No. 281½ (half width and number of drawers), **$50.90.**

Cabinet Assembly No. 280—Net dealer price, complete, **$62.40.** No. 280½ (one-half width and number of drawers), **$34.00.**

STEVENS SECTIONAL SERVICE CABINETS

occupy but little floor space, can readily be moved from place to place, make stock taking quick and simple and make possible the utmost efficiency in your service to the public, which is to a great extent the factor determining your success or failure. Money invested in real improvements to your shop will be repaid many times.

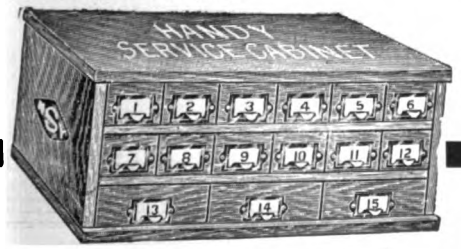
Stevens Sectional Service Cabinets can be built up like sectional book cases with selection of units to suit your needs. You build as you grow. All sections absolutely interchangeable. Additional Units can always be procured, finished to match your cabinet. We carry a great variety of units with drawers of all sizes, both sections and half sections.

STEVENS SECTIONAL SERVICE CABINET UNITS have a heavy oak frame with rich antique finish. The drawers have oak fronts, with combination pull and card holder.

THE SIDES AND BOTTOM OF THE DRAWERS are of heavy galvanized steel and cannot warp or stick. Cross divisions for drawers may be had.

The Handy Service Cabinet is one of the best little cabinets made for taking care of screws, bolts, nuts, repair parts, spark plugs and all kinds of small parts that are usually hard to find when wanted. The front and sides are ¾ inch varnished oak. There are fifteen drawers with galvanized steel sides and bottom. Not only do dealers find this cabinet admirably suited to their own requirements, but they are also selling hundreds of them to private garage owners. Dealer's Price $5.00.

Dealers: These superb utility cabinets are typical of the Stevens products. A line of auto parts and accessories which in its magnitude, variety and quality is second to none. Your jobber will furnish further information and interesting trade discounts on request.



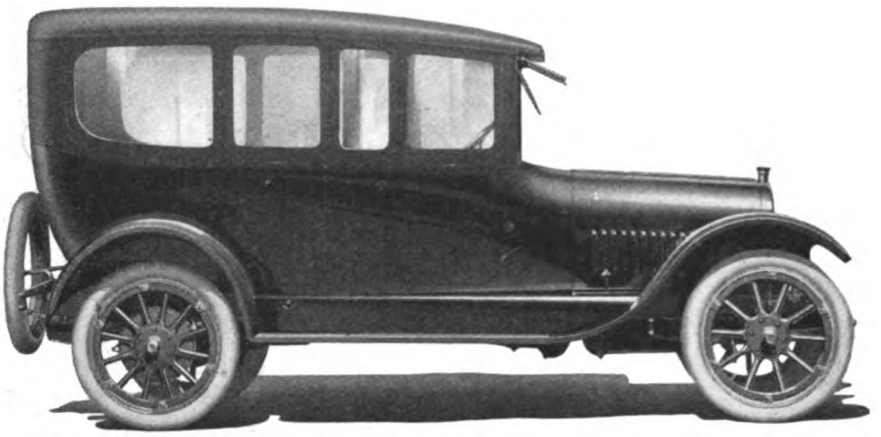
STEVENS & CO.

375 Broadway New York City

STEVENS NEW YORK

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CLOSED CARS NOW A NECESSITY



Every Touring Car Owner a

Winter Business Prospect

The **Detroit Detachable Weatherproof Top** presents wonderful possibilities during the next six months.

Tops for Every Requirement

Detroit Weatherproof Detachable Tops are made to answer every requirement of the motorist who wants comfort and convenience at all times of the year. It supplies the comfort of an expensive limousine to the most moderate priced car, and along with comfort comes appearance—which in these days is indispensable.

Limousine in All But Price

The Detroit Weatherproof Detachable Top transforms your touring car into a limousine or sedan. It does it effectively, too. When once installed the touring car is a limousine without half the cumbersome weight of a limousine and with none of its extravagant expense. It is guaranteed not to rattle and will last for the life of the car.

Eastern Distributors:

SHARRER PATENT TOP CO.

239-241 West 56th Street - - New York

When writing advertisers please mention Motor World—It identifies you

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BETHLEHEM SPARK PLUGS

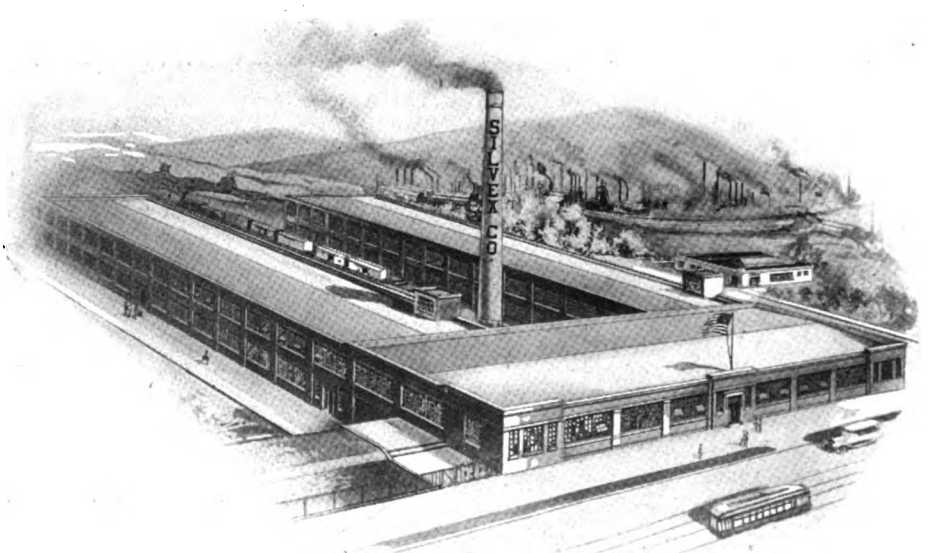
50,000 Plugs in 8 Hours

50,000 Bethlehem Spark Plugs in an eight-hour day means over 15,000,000 Bethlehem Spark Plugs a year. And this is twice as many as will be required to factory-equip all of the new cars planned for the season of 1918.

50,000 Bethlehem Spark Plugs per eight-hour day is the capacity of the great new plant shown below, that has just been completed for us.

In construction and equipment, this first of all spark plug factories is everything the trade has been educated to expect from Mr. Schwab. Located in Bethlehem, this splendid concrete and steel structure represents an investment of nearly a million dollars. It will give employment to upwards of a thousand workers. Much of the labor-saving machinery equipment was purchased more than a year ago, and is now installed and operating.

There is just one reason for this unusual expansion—it is DEMAND. And now, for the first time in the history of this business, we have facilities amply able to take care of the demand—the unprecedented demand the country over for these high quality spark plugs.



THE SILVEX COMPANY
E. H. SCHWAB *Pres.*

BETHLEHEM PRODUCTS - - BETHLEHEM PA.

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Auto Patching Cement—ensures a patch that will stick and stay stuck; 2-in-1 Tread Filler, a liquid rubber, adds mileage to tires; Rubber-Seal, permanently heals large cuts and gashes in casings and tubes; Vulcanizing Cement, for use with small portable vulcanizers, or for shop use; Radiator-Seal Compound, instantly stops radiator leaks; Carbo-Cide, a carbon solvent of unsurpassed merit; Valve Grinding Compound, Auto Top and Cushion Coating, Gasket Shellac, Varni-Brite, an auto polish; Tire Talc and Friction Tape.



ALL-WINTER SELLERS

DUTCH BRAND



PRODUCTS

What bread, sugar and coffee are to the grocer, DUTCH BRAND Products are to the automobile supply dealer—staple products—in demand 12 months in the year.

Almost every customer who comes in needs one DUTCH BRAND Product or another. A word of suggestion—an attractive window or counter display of DUTCH BRAND Products—effect sales when least expected.

Numbers of small sales of this kind mount to considerable volume in the course of a year. Volume business—quick turnover—make the cash register hum and the DUTCH GIRL popular as a money-maker.

No jobber, dealer, garageman, repairman or supply house realizes the quantity of DUTCH BRAND Products that can be sold until a stock is laid in and some slight effort put behind the line.

A national advertising campaign to the trade which reaches in addition hundreds of thousands of motor car owners serves to make the DUTCH BRAND dealer's work easy.

Jobbers who are not at present handling DUTCH BRAND Products will find listing the complete line in their next catalog a profitable investment.

Dealers, stock a complete assortment of DUTCH BRAND Products through your jobber. Join the big DUTCH BRAND family—for repeat orders and good profits.

VAN CLEEF BROS.

Manufacturers Dutch Brand Rubber Cements and Auto Chemical Specialties

7701-7711 Woodlawn Ave. " " " Chicago, Illinois

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To Dealers

Get in touch with us *NOW* for the exclusive rights for your territory. Tie up with a concern that doesn't merely sell tires but SATISFACTION as well. Don't be satisfied with selling a tire to a man ONCE. Handle a tire that is so good that the man you sell it to will come back, not for an "adjustment" but for a re-order.

Formerly sold under the name of GAULOIS Tires.

Bergougnan Tires

Manufactured by Etablissements Bergougnan, of Clermont-Ferrand, France, Established 1889.

The BERGOUGNAN tire is that kind of a tire. You may have to talk a man into buying his first BERGOUGNAN, but the second and third, and all the others, will sell themselves. Not only that, but every motorist whom you persuade into making the trial will thank you for having done so and will help you to sell more by bragging to his friends of the extraordinary mileage he gets out of them.

The Etablissements BERGOUGNAN have been making tires for twenty years. We know all there is to know about making tires. We guarantee them for five thousand miles, but they frequently render double this service. Our discounts are liberal, but we are not giving away gold dollars for a nickel. The manufacturer who offers you 30 and 5 is paying you for your slickness in "putting one over" on your customer. He doesn't care if you lose the customer. It is for you to decide whether it is better to make 50% once or 25% a dozen times.

BERGOUGNAN TIRE CORPORATION

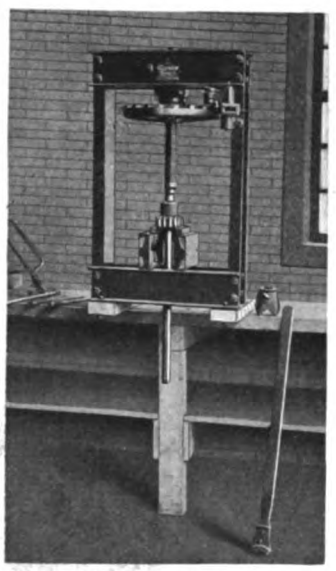
49 West 64th Street, NEW YORK
Canadian Agency, 325 St. James St., Montreal.

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MANLEY
AUTO PRESSES



Universal Auto Press. Capacity 22 tons; clearance (Lower press) 42" wide x 21" between tables; (Upper press) 18½" wide x 19" under screw; High speed leverage 1000-1—many times quicker than a ratchet; High power ratchet leverage 2200 to 5000-1 (tremendous power, little effort). Lower table instantly adjustable on pins (no bolts to remove, no danger to workman). Screw may be struck a blow under pressure without damage (equal to hydraulic press). Wide faced tables properly support work; channel blocking, properly placed (will not crush); "V" plate automatically adjusts itself to any size hub or shaft. Screw 2" diameter, 4 pitch acme thread, 12" travel, does not revolve. Weight, 450 lbs.



Auto Bench Press. Capacity 22 tons. Clearance 18½". 2-speed leverage and other features and specifications same as Universal Auto Press, into which it may be converted by purchasing at any future date and attaching bottom half (42-in. press) which fits perfectly. Weight, 225 lbs.



No. 1 Garage & Shop Press. Capacity 22 tons; clearance 32½ in. Two-speed leverage. Note the clean cut lines of this press which is built with uprights uniformly spaced from top to bottom and has every feature of the Universal Auto Press except the 42-in. clearance. It is the most powerfully constructed press of its class on the market, having 5-in. channel uprights and 7-in. channel top frame and table (bolster). Will handle the whole range of automobile work, except the larger truck wheels; maximum distance under screw to top of table 46-in. Six positions of table by 6-in. steps. Weight, 425 lbs.



No. 2—Garage & Shop Press. Capacity 22 tons; clearance 26½ in. Two-speed leverage. Exactly the same as No. 1 except that it is smaller. Maximum distance under screw 38 inches. Five positions of table by 6 in. steps. Uprights 5-in. channels. Top frame and table 6-in channels. This press is large enough for the great majority of garages having the same capacity in pressure as the larger presses and enough clearance and distance under the screw to handle practically all the work. It will admit a 34 x 4 wheel without the tire. Weight, 325 lbs.

The screw, hand wheel and ratchet parts are identically the same in all Manley Presses. Handwheel 14" diameter with 20 notches, threads 3½" long Thrust bearing tool steel.

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The Most Complete Line on the Market

THE "MANLEY" IS THE ONE LINE OF PRESSES THAT FILLS *ALL* REQUIREMENTS OF GARAGE AND REPAIRSHOP. From the "Universal Press," which will take care of the largest truck wheel, to the "Bench Press" which will handle all ordinary work, Manley Presses offer the Repairman extraordinary short-cuts, speed, safety, power and certainty.

THE MANLEY LINE ALLOWS THE REPAIRMAN to select just the Press to suit his own requirements, at a price he can afford to pay.

AND IF HE NEEDS ONLY A "BENCH PRESS" to start with and later should require a complete "Universal," he has only to add the lower half, for the Bench Press is itself the upper half of a Universal Press.

THE EXTRAORDINARY ADVANTAGES POSSESSED BY MANLEY PRESSES are *real* advantages that any garageman instantly recognizes as such.

THE ABILITY TO OVERCOME EVEN THE MOST OBSTINATE CASES by striking a blow on top of the screw; the big saving in time of the high-speed 1000-1 leverage; the ability to change to a 5000-1 ratchet leverage without losing a moment; the 42-in. clearance, admitting the largest truck wheel; the quick adjustability, the tables permitting easy and efficient handling of work; the quickly attached testing centers, which obviate the necessity for a special straightening press or lathe.

ALL THESE ADVANTAGES are possessed only by the Manley Line, which is designed and built *specially for automobile work!*

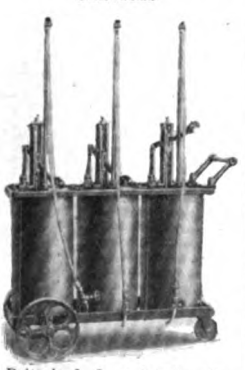
Jobbers: Do you realize the tremendous possibilities opened up by this complete line of *Manley Presses*. You can easily make sales you never could with one press only. You now give a man what he wants to suit his conditions and his pocket book. Will it go in your next catalogue?

Prices from $39 up.

UNITED ENGINE & MANUFACTURING CO.
HANOVER, PA.

MANLEY GARAGE EQUIPMENT

MANLEY PORTABLE OIL SERVICES



Built in 1, 2, or 3-tank units. Transfer oil through self-measuring pumps and special hose, directly to engine. Quick, accurate, clean, the only proper method of serving oil. Absolutely eliminate Quart Can, spilled oil, slop and waste. As necessary as proper gasoline service.

THE MANLEY PORTABLE CRANE



has extraordinary lift and overhang (absolutely needed in automobile work). Light steel superstructure, heavy cast-iron base. Its cantilever (bridge type) construction is the strongest known. Easily moved to any part of shop. 1, 1½, 2-ton capacity. Any lift up to 10 feet. Double throw operating lever, giving twice the leverage for heavy work. Safety guard on gears. Wide wheels, low clearance, locking device.

THE MANLEY EVERY WAY ENGINE STAND



holds an engine in any desired position. Locks rigidly in each position. Mounts any type motor suspension. Universal in all its adjustments. Allows workmen to get at any part easily and eliminates danger to engine or injury to workman.

MANLEY ENGINE STAND FOR FORDS



Saves more time and labor on Ford repairs than any other tool for Ford work. Exactly fits Ford engine and turns it to any position desired. No adjustments. Motor, supported rigidly, does not overhang.

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Why I Picked the Wonderful Briscoe

Serlis

KANSAS CITY, MO.

"The automobile dealer can make **real** money only when the car he sells delivers the goods—when he offers best quality at the price. That is why I chose the Briscoe.

"This year I have found it easy to sell 1200 cars in my territory—4 cars per day for each working day in the year.

"Why? Because the famous half-million dollar motor furnishes inexhaustible power—because it gives 25 to 30 miles per gallon of gas. Because the Briscoe comes in all wanted designs in exceptionally beautiful finish.

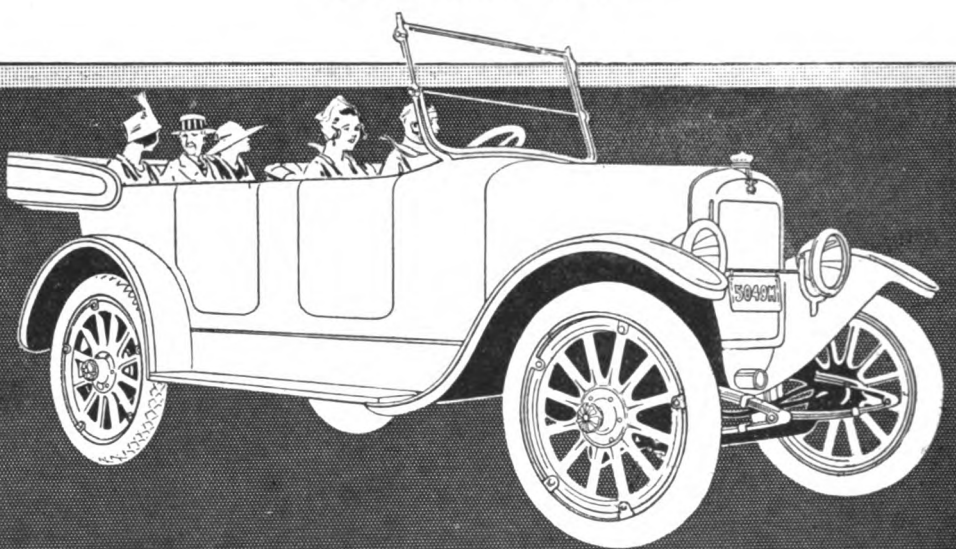
"I consider the new Briscoe mechanically perfect. I have had mighty little trouble with any car sold. Every Briscoe owner is a hearty Briscoe booster. The car's the prettiest, all-round best-looking car of its class I ever saw—and I've studied all of them."

Serlis Motor Company

4 SALES PER DAY THE YEAR ROUND!

Do you do a business like that? Can you match Serlis's success? Investigate the money-making Briscoe. The franchise is worth thousands of dollars a year. Address

Briscoe Motor Corporation
Dept. 120, Jackson, Mich.



BRISCOE $725

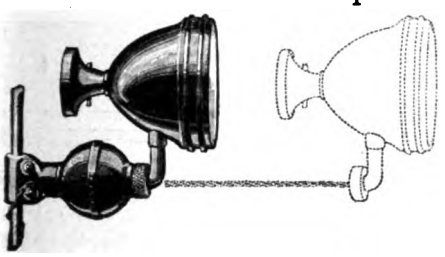
THE CAR WITH THE HALF-MILLION DOLLAR MOTOR

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ANDERSON "AUTOREELITE"

DIRIGIBLE SEARCHLIGHT AND AUTOMATIC EXTENSION TROUBLE LAMP

America's Most Popular Windshield Lamp—"Something *more* than just a Spot-light."



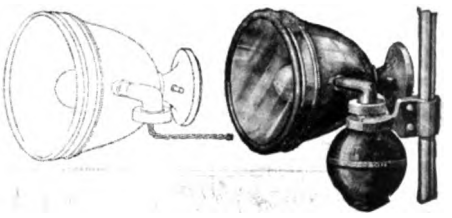
Model A Autoreelite

The original Anderson "Auto-Reel Spot-Lite." A great favorite in its first season.

Cat. No.	*Retail Price*
3110, without rear view mirror	$7.50
3120, with rear view mirror	8.00

Add "L" to Cat. No. and 50c. to List Price for "Non-Glare" Lens.





Model B Autoreelite

The new 1918 model. This design brings the lamp nearer the driver and provides an extremely rigid construction.

Cat. No.	*Retail Price*
3130, without rear view mirror	$7.50
3140, with rear view mirror	8.00

Add "L" to Cat. No. and 50c. to Retail Price for "Non-Glare" Lens.

This is the first dirigible windshield lamp put out with a "non-glare" lens to meet the legal requirements of many states. Preserves the most important functions of a Searchlight and all the features of the Anderson "Autoreelite."

The "Star Lancaster" Non-Glare Lens is warranted by the manufacturers to comply with the Non-Glare laws of every state which has enacted such legislation.

Dirigible Driving Lamps are a necessity on country roads for:—

Locating ditches;

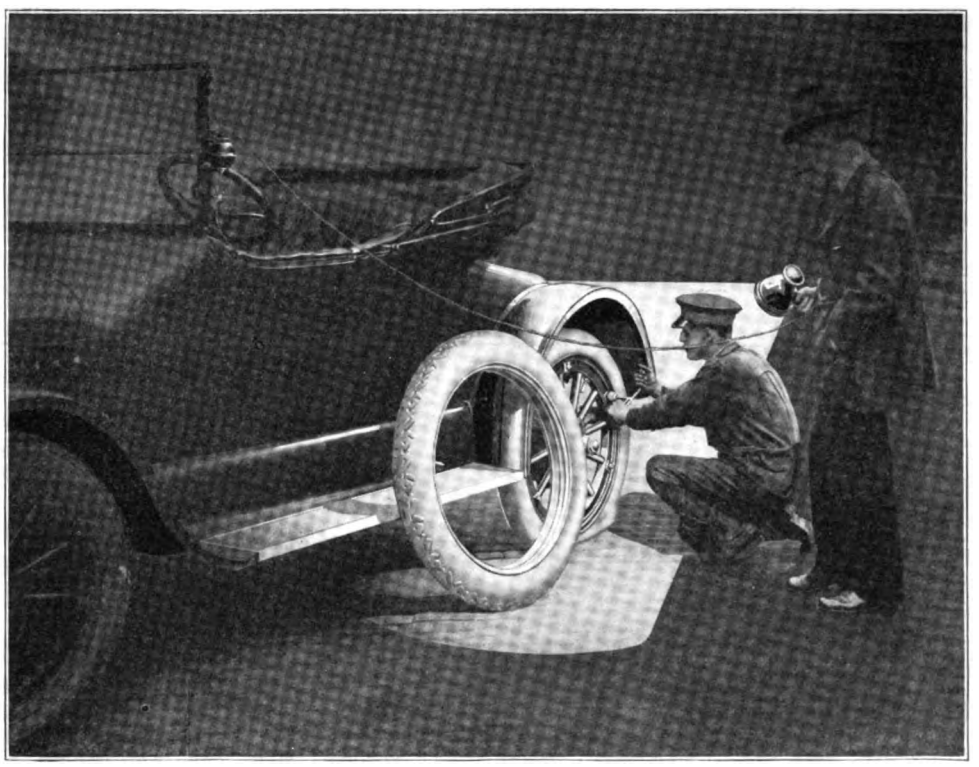
Marking the edge of the roadway;

Illuminating dangerous corners and turns;

Turning around or backing the car;

Reading road signs, house numbers, etc.

Ask the car owner who has one — he will tell you that he would not start on a tour without it.



The only perfect combined trouble lamp and spot-light on the market. In addition to the superior quality of the Spot-light, the extension trouble lamp feature is alone worth its cost.

Simply unscrew the knurled nut and the lamp may be extended 12 feet—sufficient to reach any part of the car. "Reel works like a curtain roller."

Lamp and bracket in beautiful black enamel backed by a 21 c.p. nitrogen lamp in a silvered parabolic reflector of carefully designed contour. C/H switch in handle. 3½ inch reducing mirror for rear view if ordered.

3 pairs of clamps—round, oval and rectangular included with each lamp. Use the pair required and discard the other two.

Make Tire Changing and Repairs As Easy By Night As By Day

To Jobbers, Dealers and Garagemen: Think what the advantages possessed by the Autoreelite mean to you as a Selling Proposition. Look at the question from the Car Owner's point of view and you will see why he will buy the Autoreelite as against any other spotlight. Although this lamp has been on the market but six months its present popularity is a sure index to the 1918 demand. There is a reason. *Write for proposition.*

Sole Manufacturers and Patentees:

ANDERSON ELECTRIC SPECIALTY COMPANY

Eastern Representatives: Hatheway & Knott, Inc., 120 Liberty St., New York. **562-564 West Van Buren St., Chicago, U. S. A.**

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THE REASON FOR

AMBU TRADE MARK

ELECTRIC TROUBLE SHOOTER

—BY—



H. H. Buckwalter

President

AMERICAN BUREAU OF ENGINEERING, Inc.

From the prairie schooner to this age of rapid diversified transportation, on land, water and in the air.

From tedious intervals of interrupted communication to the telegraph and long distance telephone and the wireless.

From communities more or less remote from each other to a nation of one hundred million closely linked by national interests and lines of transportation and intelligence.

An industry—the Automobile—in a few years developed so that its appeal reaches one in every twenty-five of our population and the limit not nearly reached yet—I have watched all these gigantic strides—I have lived in this pulsing atmosphere of growth unparalleled, I have sensed it, and have grown with it and profited by it. My vision thus has the soundness of realization, not theory.

The judgment to see that complexities of interest must needs call for rapidly increased efficiency. The knowledge that we must go on, not stand in our tracks.

So AMBU was conceived

AMBU, the Electric Trouble Shooter, evolved by human brains yet surpassing the human brain and hands in its ability.

AMBU, dreamed of, experimented with and finally carried to perfection. With the constant visualization of overwrought repair and garage men striving their best to surmount increasing problems within their limited scope of experience and facilities.

Perfected in spite of the inborn skepticism of these people —skepticism which is slow to see, believe or accept, justified perhaps because of rapid strides geared to a point beyond the average perception.

And yet I had the courage to picture to myself, AMBU —in use and the treasured tool of every garage man in the country; the world in fact is not without the circle of possibilities.

Warfare compelled the perfection of the aeroplane and submarine. So necessity has demanded AMBU.

Electricity as intangible as air has puzzled even the most expert.

The automobile industry has been beset with an overnight change to complex electrical equipment.

The examples of realization and concrete evidence of success of aeroplanes, submarines and countless other scientific achievements have taught their lesson.

And I am not too modest to parallel by comparison of AMBU with the other great achievement of the century. Thousands have adopted AMBU with a ready appreciation of its merits and need. Of these I am supremely proud, not alone for their sagacity and business foresight but because they have verified my initial belief in AMBU.

In the repair and detection of electric starting and lighting troubles it is in its ability—the wireless, the aeroplane, the submarine, shall I say rolled into one, I believe with all my heart that AMBU is a great invention. I know from the countless letters of appreciation the great work it is doing for those who have already bought it.

And so I urge upon those who do not own AMBU—throw off the shackles of procrastination, doubt and skepticism. Get into the spirit of the times and adopt AMBU. Its merits are myriad, its need great, its money-making possibilities exceptional.

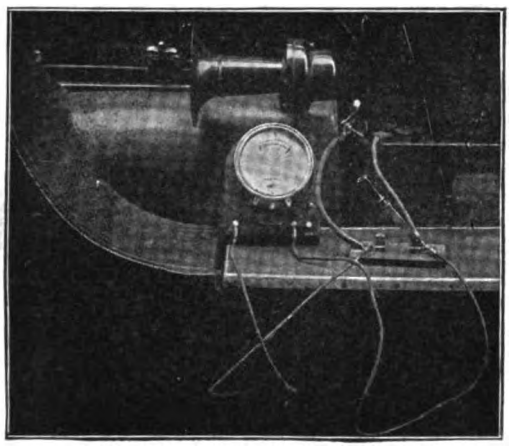
And I make this personal appeal for an opportunity to convince you of your need of AMBU. It will satisfy you as it has satisfied me. It will do for you what it is doing for others.

I should like to see my vision further verified. I believe with all the conviction of a practical man that AMBU is absolutely essential to every man who presumes to repair Electric Starting and Lighting units on automobiles.

I do not hesitate to say forcibly that AMBU can be made the means of stimulating every angle of your business.

Were I to talk to you personally, I should convince you because you would have confidence in me. May I hope that this message will carry a touch of my confidence in this instrument of which I **know** you are in great need, and of which I am very proud.

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How AMBU Attaches to Battery

Ambu Electric Trouble Shooter is an instrument which automatically detects and locates accurately and quickly trouble in any American made starting and lighting system used as standard on any American made cars—
and shows you what the trouble is and exactly how to repair it—

Autolite, Remy, Bijur
Rushmore, Delco, Westinghouse
Dyneto, Entz, Gray & Davis,
Splitdorf, Apico, North East,
U. S. L., Wagner, Ward Leonard,
Adlake, Leaco, Disco,
Allis-Chalmers, Bosch, Jesco,
Esterline, National,
Leece-Neville, Simms-Huff

Ambu service consists of Ambu wiring diagrams—showing the exact layout of every electrical system as applied to automobiles; covering 400 or more cars.
Ambu Repair Charts—giving concise and practical working information and complete instructions on how to make repairs quickly and positively.

AMBU SERVICE

Ambu Service Bulletins keep you posted on all changes, additions and improvements which may be made in the various systems.
Ambu Engineering Advice—to help you out of any unusual difficulties.
The complete Ambu Service contains information impossible for you to obtain in any other way—viz., showing internal hidden wiring connections rarely shown by the makers themselves—classified, systematized, readily accessible, and filed in a handsome, substantial metal case with lock—a compact authoritative service.

AMBU ENDORSED BY BIG MEN IN AUTOMOBILE BUSINESS

Big men seriously endorse Ambu because they quickly see its wonderful value—

We have scores of enthusiastic letters from owners and users of Ambu,

the seal of approval from men who know and who are making their shops more prolific—more efficient and reaping a nice income—

We will gladly supply their names and facsimile copies of their letters if you desire that evidence.

And remember—our interest does not stop with your purchase, it centers in you as long as you are in business and are using Ambu—we show you the way to more and better business—

The logical step in making your repair department more prolific and more efficient in Electrical Starting and Lighting repairs is the adoption of—

AMBU
TRADE MARK

It's the step from a perhaps limited Electrical knowledge, from guess work, from searching all over the car in a half blind way to the possession of an accurate complete knowledge and definite assurance of a quick successful repair job every time you tackle one—

And a good price for the work, too—because you and the car owner know it's right.

Ambu enables you to make your Electrical repairs more prolific and more efficient.

Ambu puts you—no matter where you are located—in the same class with the best informed starting and lighting repair men in the country—

With Ambu you become expert—quick, an authority—a prolific producer—

Because—you know where the trouble is—after making 3 short tests with Ambu—what it is—and you quickly and efficiently repair it—

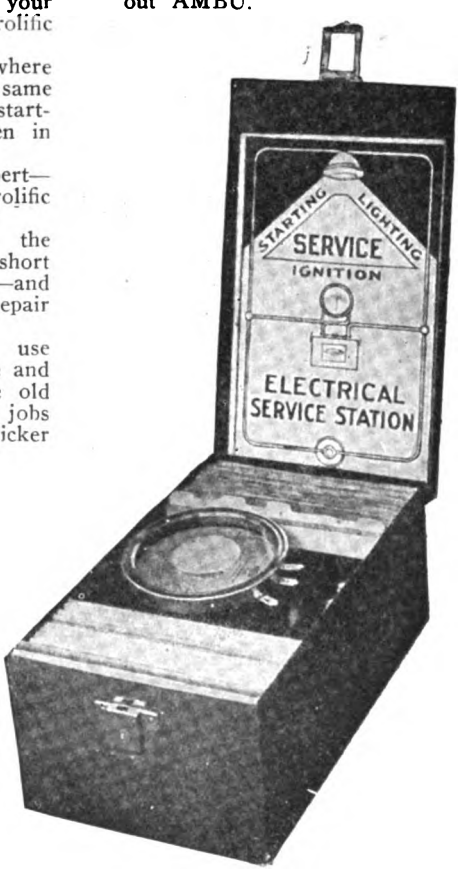
It takes less time—if you use Ambu to make authoritative and lasting repairs than by the old methods so you can do more jobs each day—better work—quicker work—more work—satisfied car owners.

That's the result of the possession and regular use of Ambu—

If you knew all about all the many makes of starting and lighting systems—if you knew the wiring and adaptations on every make of car you would not need Ambu—

But it's humanly impossible for you to know all this—there are too many and you have not the time or opportunity to master this overwhelming detail. So you do need **AMBU**

Because Ambu knows and by the simple operation of buying the instrument—wiring diagrams—charts and instruction book—simple, specific and easily understood—you become the possessor of this valuable knowledge—instead of spending months in acquiring a smattering knowledge and applying guess work methods to repair work while learning—without AMBU.



AMERICAN BUREAU OF ENGINEERING, Inc.

Automobile Department

1018-28 So. Wabash Avenue **Chicago, Illinois**

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A Safeguard Against Lost Sales

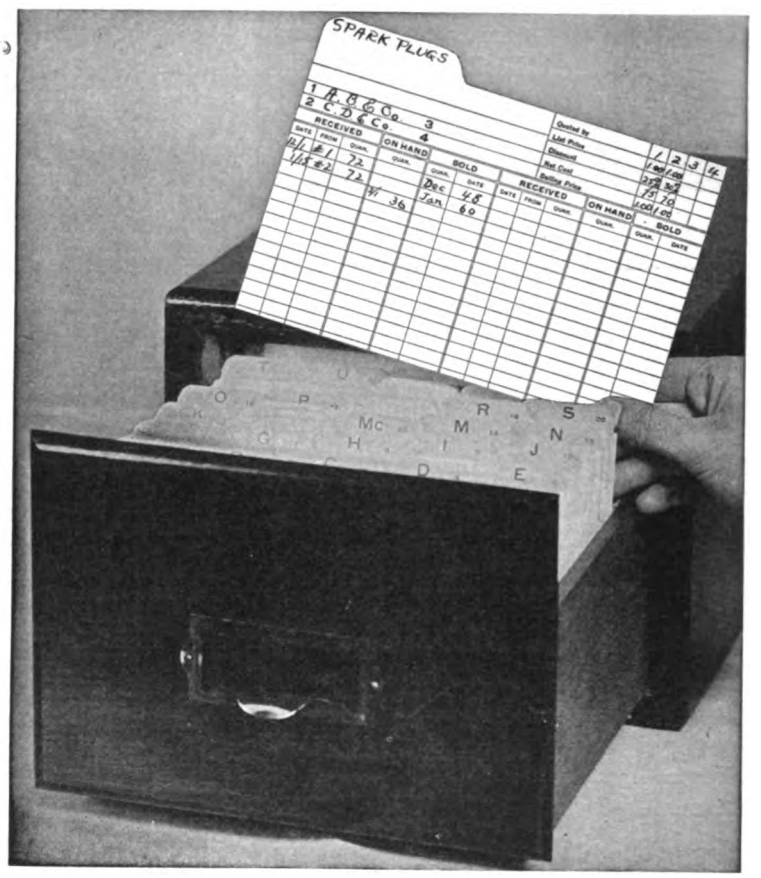
A SIMPLE SYSTEM THAT MEANS MONEY TO YOU

Motor World's Inventory and Perpetual Stock Record

A complete record of your stock of materials and accessories on hand. Motor World's Inventory Card shows you, in a jiffy, the condition of your stock of any article on hand, what it costs, its selling price, how many bought, how many sold, and the balance on hand.

YOU NEVER RUN OUT OF STOCK OF ANY ITEM

No stock means no sales. You have an absolute check on everything going into and everything leaving your stock room.



Prevents Leaks in the Stock Room

This system is essential to good business methods.

You Should Have It

Now is a good time to install the Motor World Stock Record System.

Act at once. The summer rush is over and the time is here when you can give attention to the efficiencizing of your business.

This system pays for itself. Fill in the coupon below and mail TODAY with your check or money order.

PRICES

CARDS, size 4 x 6, $1.25 per 100, $9.75 per 1000.

CARDS, size 5 x 8, $1.50 per 100, $12.75 per 1000.

OUTFIT No. 46A, consisting of 500 cards 4 x 6, set Alphabetical Guides and OAK filing cabinet (see illustration) complete, $9.75.

OUTFIT No. 58A, consisting of 500 cards 5 x 8, set Alphabetical Guides, and OAK filing cabinet (see illustration) complete, $12.00.

These articles are guaranteed. If not as represented we will either refund your money or replace the goods.
Special forms for follow-up cards, etc., made up to fit your particular needs. Tell us about your requirements for accurate and quick service.

A. BOBBE & COMPANY

Exclusive Authorized Manufacturers of Motor World's Card Systems. Card Supplies and Systems a Specialty.

320 BROADWAY NEW YORK CITY

Purchase Order System.
Prospect Follow-up.
Tire Repair Tag.
Auto Repair Tag.
Automobile Storage Tag.
Tester's Report.
Customer's Authorization for Repairs.
Shop and Material Requisition.

And all other system forms shown on pages 89-90-91 of this issue of Motor World can be supplied on short notice.

When asking for prices be sure to state the quantity of each form that you can use.

A. BOBBE & CO.,
320 Broadway, New York.

Enclosed please find $..... for which send me

Outfit No. .....
or
..... cards .... x .... $.....
Quantity Size Price

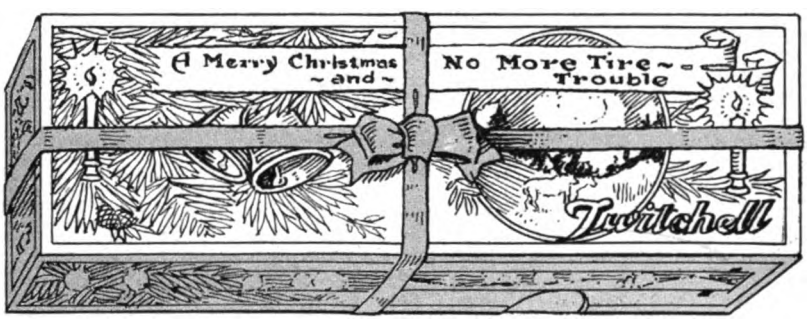
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Address .....

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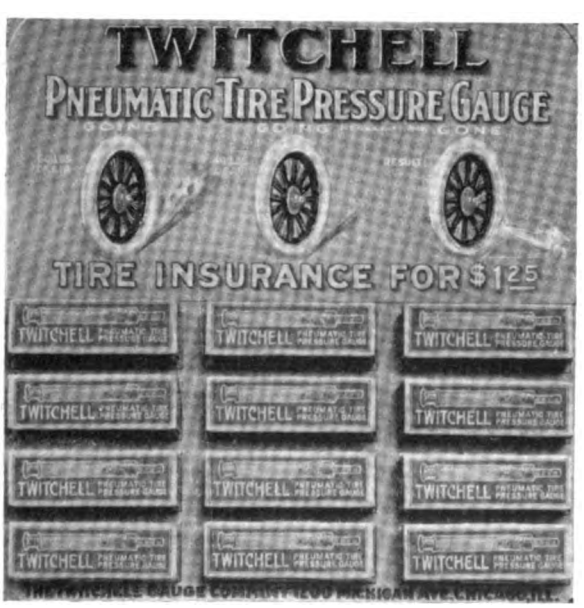
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TWITCHELL GAUGES *for Christmas*



In order to facilitate the sale of TWITCHELL gauges as Xmas presents we are prepared to supply dealers with special holiday jackets (as illustrated), which can be slipped over the regular boxes used the year round. These jackets are gay with holly and very festive in appearance and add a great deal to the attractiveness of the package.

Sales Help for the Year 'Round



As a window display they cannot fail to arrest the attention. Write for your supply. They are furnished without cost.

SPECIAL NOTICE

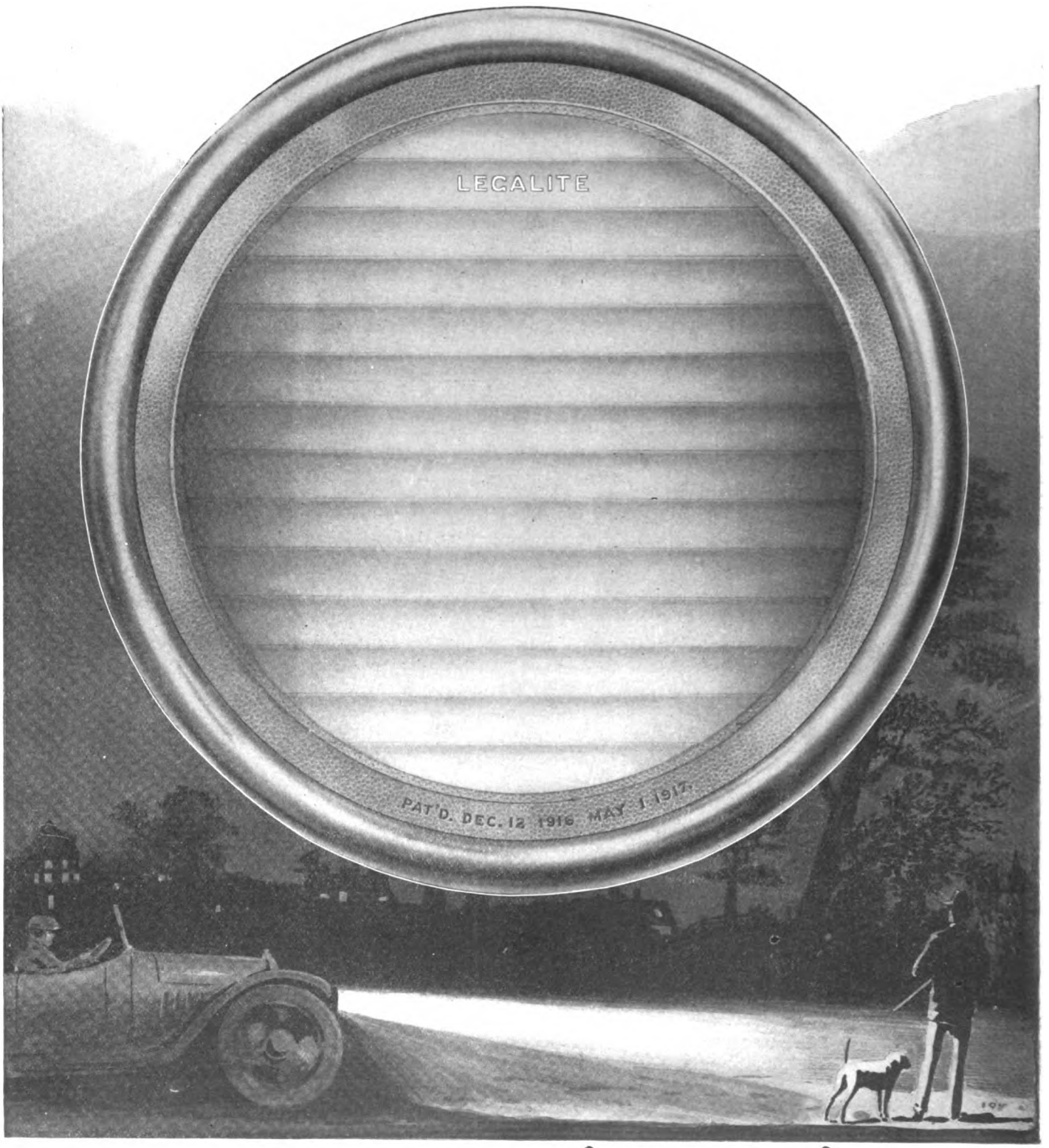
The TWITCHELL gauge is now packed in dozen lots for mounting on an attractive counter display easel. Dealers having used this rack for the presentation of TWITCHELL gauges report their sales very materially increased thereby.

THE TWITCHELL GAUGE CO.
1220 Michigan Avenue, Chicago

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LEGALITE

Complies with All Headlight Laws

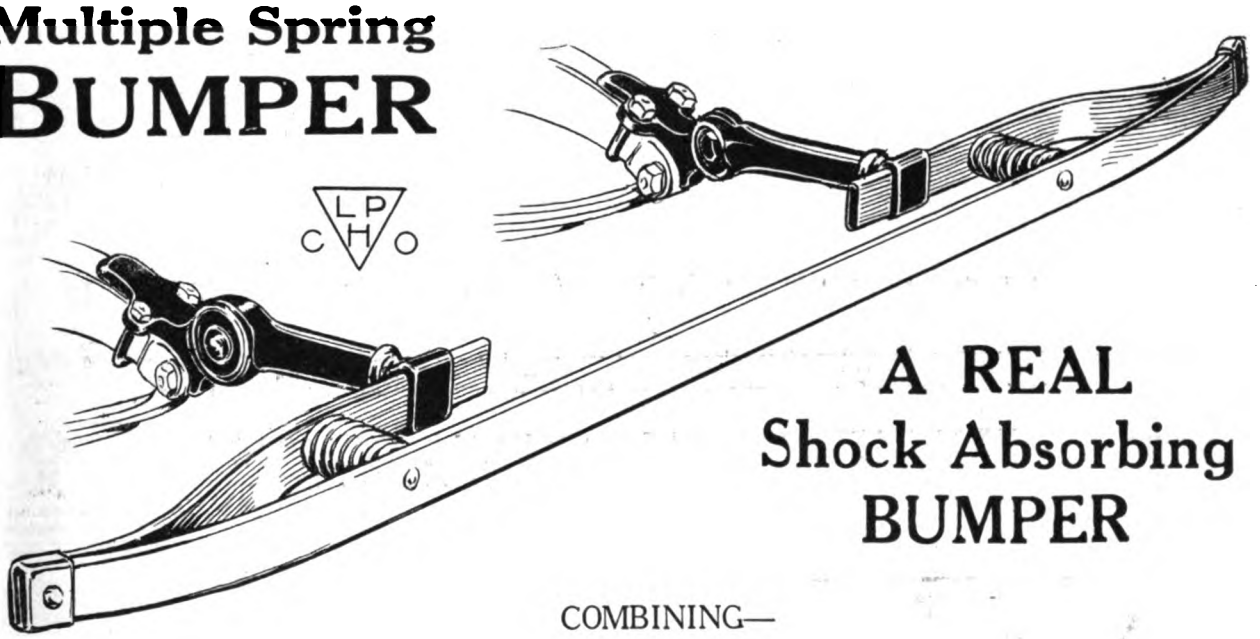


LEGALITE CORP., 120 Franklin St., Boston, Mass.

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The High Water Mark in Bumper Efficiency

The New
HALLADAY
Multiple Spring BUMPER



A REAL Shock Absorbing BUMPER

COMBINING—

A Resilient Spring Bar

Two Heavy Spiral Buffer Springs

Two Spring Support Bars

A total shock resistance that insures the utmost protection to all parts of the car with the least possible strain on the car frame.

This bar will be supplied with the new Halladay Adjustable Side-Clamp connection or any of the Halladay connections of adaptable or special types.

Live dealers and experienced drivers will quickly recognize the efficiency and selling qualities of this bumper.

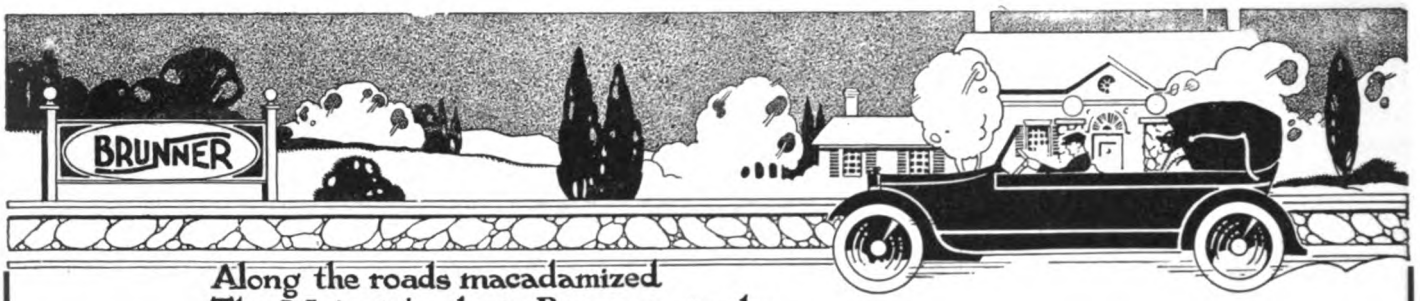
Distributed to the trade thru regular channels.

L. P. HALLADAY & COMPANY, Streator, Illinois

DISTRIBUTORS:

Asch & Co., 16-24 W. 61st St., New York City.
E. L. Thompson Co., 817 Boylston St., Boston, Mass.
Gray-Heath Co., 1440 Michigan Ave., Chicago, Illinois.
Sanford Brothers, Chattanooga, Tenn., Southern Distributors.
Hughson & Merton, Inc., San Francisco, Los Angeles, Portland and Seattle, Pacific Coast Distributors.

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Along the roads macadamized
The Motorist who is Brunner-wised –
Speeds smooth-with danger minimized
Because his tires are Brunner-ized –

WE USE A BRUNNER AIR COMPRESSOR
FREE AIR
FOR YOUR CONVENIENCE

The Brunnerwise Motorist knows that properly inflated tires minimize the danger of motoring and insure smooth rides with lower tire expense. He also knows that Brunner Service satisfies and he consistently patronizes the garages displaying the Brunner Sign.



DON'T WAIT TILL SPRING TO IMPROVE YOUR SERVICE. DO IT RIGHT NOW—INSTALL BRUNNER SERVICE—THE TRADE OF THE BRUNNERWISE MOTORIST WILL IMPROVE YOUR BUSINESS THIS WINTER.

INVESTIGATE THE BRUNNER AIR COMPRESSOR



The Brunnerwise Motorist

Mr. Garageman, the selection of your air compressor equipment is a matter that you should give your very careful attention. Before making your selection you should read Brunner's Garageman's Handbook on Compressed Air and get the facts concerning the Garage Air Compressor situation today—this book with our No. 14 catalogue and the name of the Brunner Jobber covering your territory will be mailed to you upon request.

BRUNNER MANUFACTURING COMPANY

Main Office and Plant
UTICA, N. Y.

Cincinnati Branch
CINCINNATI, OHIO



The Brunnerwise Garageman

S-M-C

S-M-C Asbestos Brake Lining

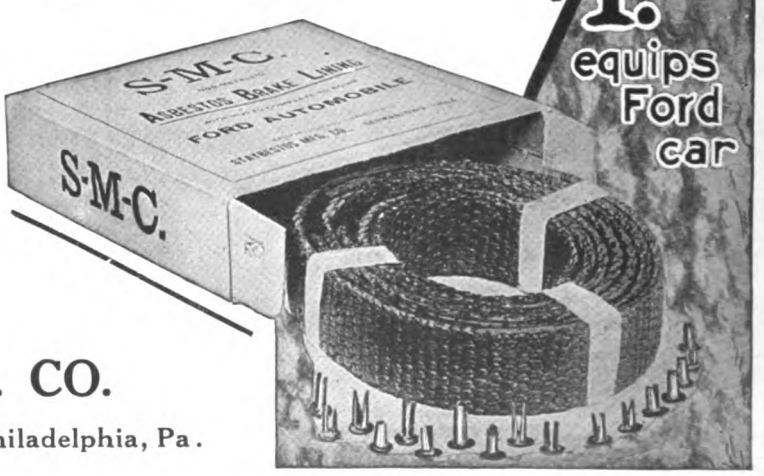
Increased Winter Sales of Brake Lining come easiest with S-M-C—the brake-lining that gives utmost satisfaction.

When you take down a car and put in S-M-C Brake Lining, you know that the brakes will stand up under every test. S-M-C means Safety Made Certain.

$1.50 equips Ford car

S-M-C Set for Fords

$1.50 is complete with three proper lengths for Ford Transmission and all rivets required. *At best dealers.*



STAYBESTOS MFG. CO.

The "Modern" Factory 5536 Lena St., Philadelphia, Pa.

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The New Speer Illustrated Brush Catalog

IS NOW READY FOR DISTRIBUTION

This catalog illustrates and describes every brush used on starting and lighting systems of automobiles, regardless of whether the equipment is modern or has been in use several years.

Information regarding the correct brush for each car or equipment is also given, thus making the catalog invaluable for dealers, garages and supply houses.

THE ENCYCLOPEDIA OF THE BRUSH INDUSTRY

Write today and have your name placed on the mailing list

SPEER CARBON COMPANY

ST. MARYS, PA.



CURTIS AIR FREE FROM OIL

The Curtis Compressor is the only one designed to prevent flooding the cylinder with more oil than it needs for lubrication. This, because of our controlled-splash oiling system. No excess oil is forced into the air line. **Oil ruins tires**—air free from oil means fewer blowouts and increased mileage all around for your customers, with less tire adjustments to you. Make your place the most popular one in town. An easy and inexpensive way, is to install a Curtis Compressor. The customer assumes if you have the best free air service, you will have the best service in all departments.

Costs No More Than Ordinary Compressors—But Note The Difference

Live garages and service stations are using Curtis Air Compressors. Motorists expect free air service. Why not give them the best and win over new customers by supplying, not only reliable air service, but **Curtis Air—Free From Oil.** A poor air system which shoots oil into the tires, or which is unreliable, drives customers away. Thousands of Curtis Outfits are rendering daily, effective, efficient service all over the country. Your Curtis Compressor can further pay for itself by supplying air for air hoists, painting, cleaning, vulcanizing, blowing dust and drillings from tools, and many other things. Curtis Compressors are backed by manufacturers who have been specialists in this line for twenty-five years.



10 Combinations of Compressor and Tank Sizes—Any Current

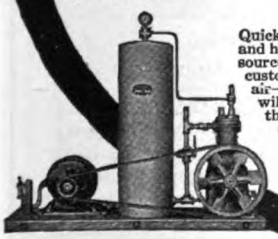
Five Sizes—Tight Pulley Only, or Tight and Loose Pulley

11 Combinations of Compressor and Tank Sizes—Any Current

Makes New Customers—Holds Old Ones

Quickly pays for itself in bringing in new trade and holding the old trade, for it not only is the source of a dependable supply of air when your customers want it, but it also supplies clean, cool air—free from oil. Motorists realize that oil will quickly destroy their inner tubes, and, therefore, look for a station that supplies Curtis Air—Free From Oil.

Curtis Compressors are built to meet the requirements of your business in sizes, arrangements and prices. Send coupon at once for full information and attractive prices. It will pay you to investigate our proposition. *Write us today, or ask your jobber for prices—but insist on a Curtis.*



Curtis Pneumatic Machinery Co.

1546 Kienlen Avenue St. Louis, Mo.
Hudson Terminal, New York

Curtis Pneumatic Machinery Co.

1546 Kienlen Ave. St. Louis, Mo.

Gentlemen: Please send me full details regarding Curtis Garage Air Compressor—your proposition and low prices.

Name.....

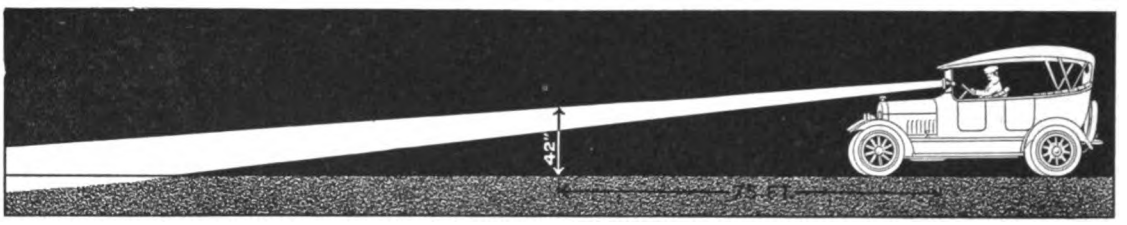
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Jobber's Name.....

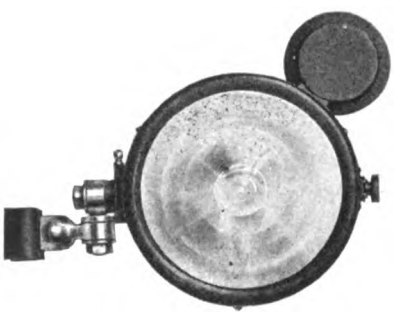
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"THE LIGHT THAT SHOWS THE ROAD"



The SPOT-LITE That Standardized Itself Upon Merit



In 1911 the first SPOT-LITE ever manufactured was placed on the market by the S & M Lamp Co.

Altho sold exclusively thru jobbers, the sales have increased from 500 during the first year to an average of 2000 a month in 1917.

This wonderful record was secured without national advertising and is the result of strict adherence to a policy of giving Jobbers and Dealers an article that gave satisfaction to every purchaser and that was never relegated to the scrap heap.

THE S & M SPOT-LITE IS NOW THE FACTORY EQUIPMENT OF SEVERAL HIGH CLASS CARS

"and its beams of light are making night motoring safe on the roads of every state in the Union as well as on those of Spain, New Zealand, and the Hawaiian Islands." Our new building is undoubtedly the most completely equipped SPOT-LITE factory in the United States.

The Several Models afford Light Projection ranging from 1000 to 2400 feet, and prices vary from $7 to $10.50.

IF YOUR JOBBER CANNOT SUPPLY YOU—WRITE FOR CATALOGUE DISCOUNTS, ETC.

SPECIAL FEATURES

A regulating device enables the adjustment to conform to laws of all states.

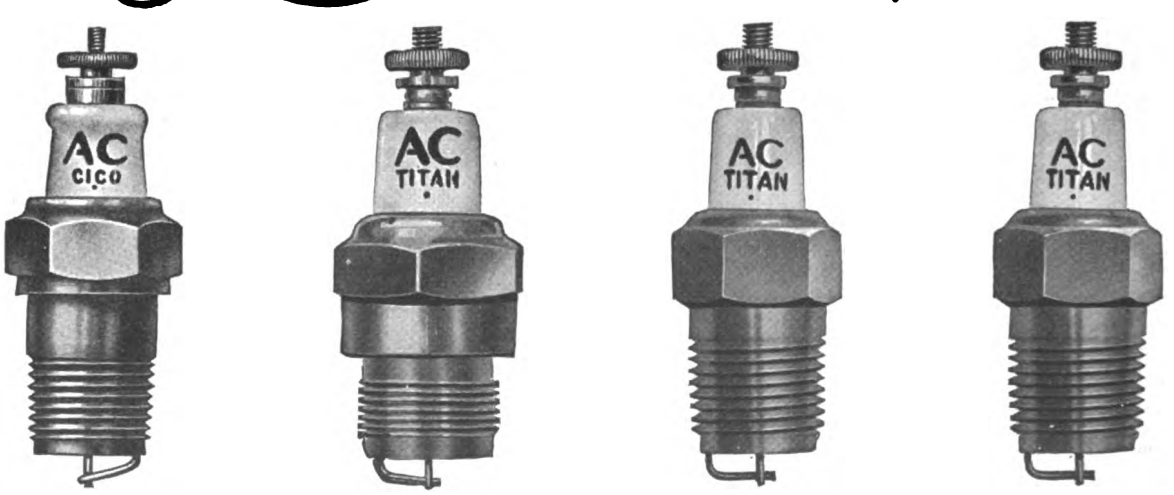
The S & M Periscope, a specially made 3-inch GROUND and POLISHED minifying Lens Mirror, can be readily attached.

S & M LAMP COMPANY

117 W. 36th Place *Pioneer Manufacturer of SPOT-LITES* **Los Angeles, Cal.**

AC Spark Plugs

The Standard Spark Plug of America



Special for Ford Cars A C CICO

⅞" Regular For Maxwells A C TITAN

½" Regular For Willys-Overland A C TITAN

⅝" Regular For Studebakers A C TITAN

AC Plugs have proven to be the best under all conditions. That is why 80 manufacturers of Automobiles, Trucks, Tractors and Aeroplanes use them for regular equipment. The leading race drivers are using them. *Your* motor will not give its best performance unless equipped with AC. You will come to them in time. Why not buy a set *now* and note the improvement?

CHAMPION IGNITION COMPANY, Flint, Michigan, U. S. A.

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Cash In on the Demand We are Creating for

KOR-KER Tire Treatment

ALCEMO MFG. CO.,
83 Fridge St., Newark, N. J.
Please mail me your book and your dealer proposition.
.....
.....

It's a Time-Tested Proven Success.

Kor-Ker *seals punctures* instantly and permanently. It ferrets out and *stops slow leaks.* Kor-Ker *prevents under inflation*—you dealers know what that means to the life of a tire.

Kor-Ker is a *preservative of rubber.* Not a filler.

We *guarantee* it *will not injure* but, on the contrary, *give them longer life.*

Motorists have tried Kor-Ker out and found it's *made good* under the *most severe tests.*

We have distributors in U. S., Canada, England, France, Russia, Norway, Sweden Holland, Spain, Portugal, India, Egypt S. Africa, S America, Australia, New Zealand, Java, Philippines and Trinidad.



Driving Nail into Tire Treated with Kor-Ker Tire Treatment. This is the strongest proof anyone can ask and will convince the most skeptical.

We are advertising KOR-KER for you in 25 leading magazines

There's a big, liberal profit in it for you. ***But first make us prove to your own satisfaction that we've got the goods.*** Then let us tell you what other dealers are doing with Kor-Ker.

ALCEMO MFG. COMPANY, 83 Bridge St., Newark, N. J.

For greatest efficiency in the smallest space

Black & Decker
LECTROFLATER
ELECTRIC AIR COMPRESSOR
No. 2 Stationary Tank Outfit

Consists of a standard No. 2 Lectroflater mounted on a 16" x 30" tank and equipped with an automatic pressure switch.

The Switch starts the motor when the pressure in the tank falls below 120 lbs. and stops it when it reaches 150 lbs.

The tank will deliver instantaneously enough air to pump 10 tires from 40 lbs. pressure to 80 lbs. without having to wait for the pump to catch up.

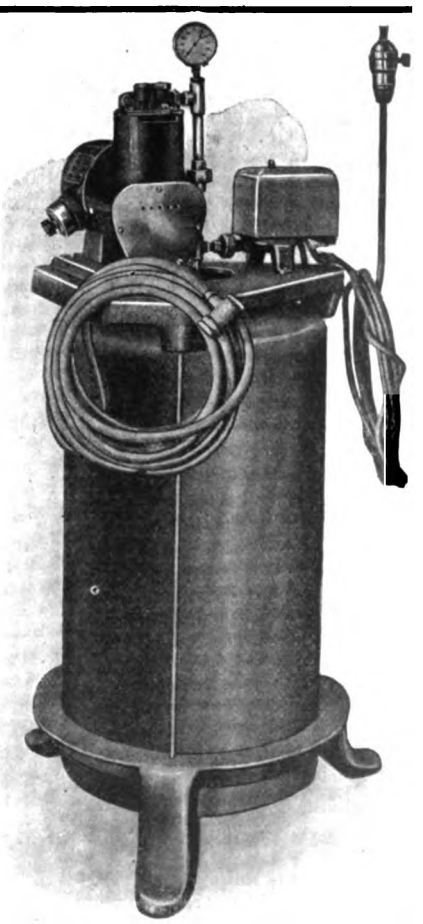
Negligible upkeep cost. Automatic grease lubricated—no oil to ruin tires. Scientific air cooled—no water to freeze in Winter.

Outfit completely piped and wired. Simply plug to nearest lamp socket. Uses either alternating or direct current. Air can be piped to delivery hose anywhere.

Write today for illustrated booklet "A Friendly Touch," describing the entire "Lectroflater" line of electric air compressors. Prices from $50 up.

Black & Decker Mfg. Co., - 109 SOUTH STREET BALTIMORE, MD.

Distributors for Canada— *Northern Electric Company* LIMITED Montreal



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STEER WARMS

MEAN

Comfort in the Car

FOR

Women in Winter



LIVE DEALERS

are finding Steer Warms great business bringers. Sell on sight to live motorists all over the cold-weather country. Make people—especially women—use their cars all winter. Help the sale of accessories and supplies. Because

STEER WARMS

Keep the Hands Warm in Coldest Weather

and warm hands mean the warmth all over that gives comfort and wards off "bad colds"; also limber fingers that give firmer grip and make driving safer.

GUARANTEED: Steer Warms are guaranteed against burn-out for five years, and guaranteed every other way; money refunded if they fail in anything we claim for them.

THE ONLY hand-warmers in which the heating element is protected, insuring uniform and unbroken heat. Don't experiment with infringements—get the genuine Steer Warms.

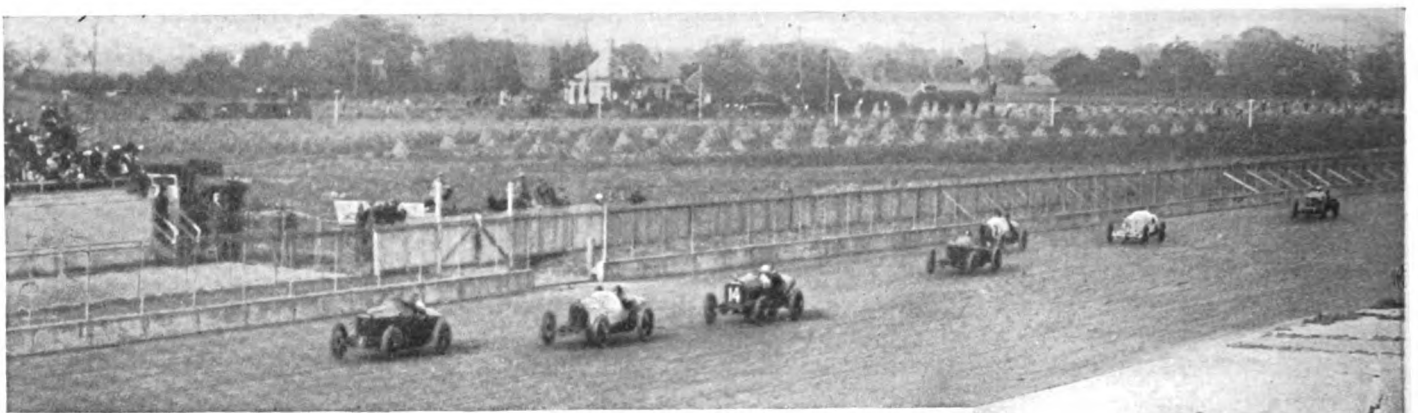
PRICES—For all gasoline cars, $7.50 a pair (in Canada, $11). Special for Ford cars, $5 (in Canada, $7.25).

Good Profit to Dealers

Liberal discounts from retail prices give dealers good profits in handling Steer Warms and national advertising and dealers' aids which we furnish make Steer Warms "big sellers." It will pay YOU to handle them. Write for full information.

INTERSTATE ELECTRIC CO.

846 Perdido St. New Orleans



Victors

New Departure Ball Bearings carried Chevrolet's chassis to victory in the 100-mile race for the 1917 championship and Harkness Trophy at Sheepshead Bay on September 22.

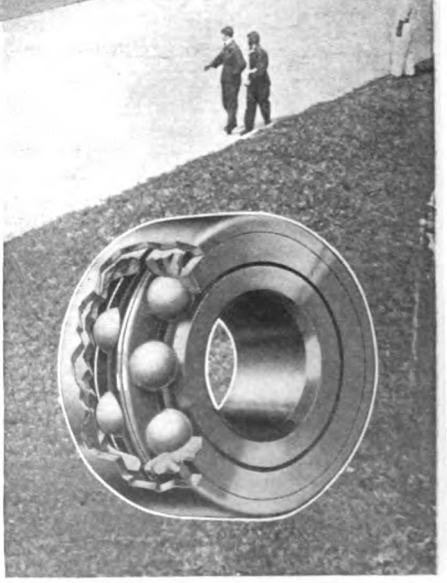
Likewise, Eddie Hearne's Duesenberg (third) and Mulford's Frontenac (fourth) were equipped throughout with New Departures.

It is a fitting tribute to New Departure quality that these ball bearings should aid in establishing both the 1917 champion and the new 100-mile record.

You should know why New Departures are chosen for the Big Jobs — where strength, stamina and service are first considerations. Send for the Brown Book

THE NEW DEPARTURE MANUFACTURING COMPANY, Bristol, Conn.

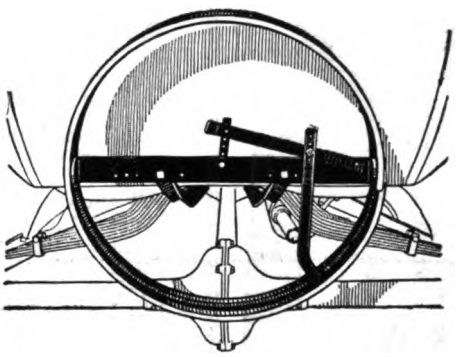
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For Ford and Chevrolet Cars



The Logical All-Season Carriers

Thief-Proof - Gravel-Proof - Dust-Proof

Scientific, ridge-in-rim, water-tight construction means perfect protection for spare tires against Winter's snow, slush and mud.

A LIVE PROPOSITION FOR LIVE DEALERS

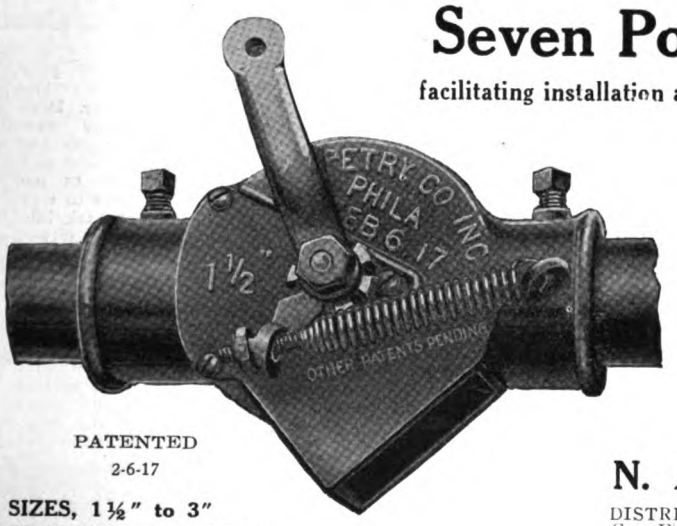
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982 WOODWARD AVENUE
DETROIT, MICHIGAN

Seven Points of Adjustment

facilitating installation and eliminating in most cases the use of pulleys.



PATENTED
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SIZES, 1½" to 3"
PRICES, $3.50 to $5.00

Every motorist is quick to appreciate this exclusive, patented feature of the Petry.
Yet it's only **one** of the many constructional advantages of a cut-out scientifically correct in every detail.
The Petry Cut-Out is the first device of its kind to give permanent satisfaction. It expels the exhaust gases through a full-size megaphone-shaped vent, which greatly augments sound and facilitates tuning up of motor. Has adjustable lever, positive cut-off non-fluttering valve, and is absolutely noise-proof when closed. Spring away from the heat. Makes a gas-tight joint of permanent rigidity without strain on exhaust pipe. Easy to install and easy to operate. A size perfectly suited to every car.

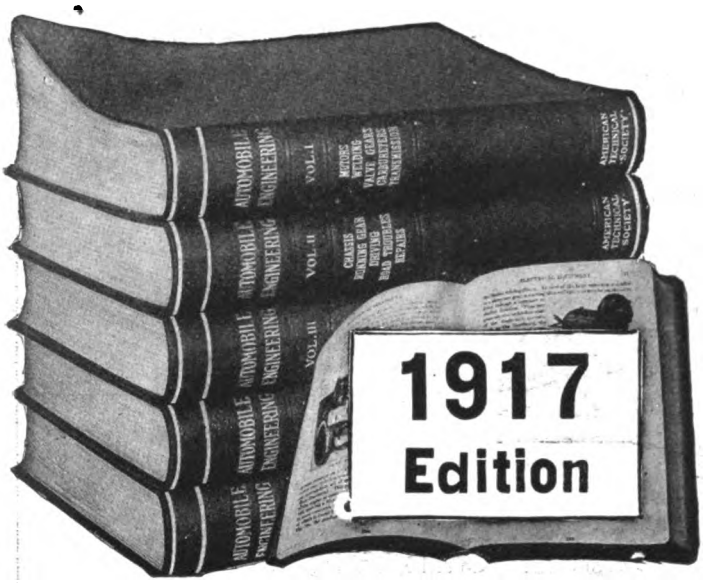
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M.Wld. 10-10-17

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Address.....

Reference.....

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A Searchlight

Here's ONE

SUPERIOR SPOTLIGHT

"The Light That NEVER Fails"



All you've got to do is *show* this spotlight—pointing out that it is fitted with ten feet of cord so that it can be lifted out of the socket and carried to any part of the car. That's enough. Any man who has ever had to monkey with his engine or fumble with a back tire out in the darkness of a country road knows what such a light means. You don't have to *coax* motorists to buy *this* light—they *grab* it.

Notice that the position of the mirror is independent of the position of the lamp



A Trouble Lamp

¶ *If you haven't stocked the SUPERIOR write now for our liberal dealer proposition. There's a lot of money in this for the man who gets to it early.*

Pittsburgh Lamp, Brass & Glass Co.
Pittsburgh, Pa.

More Profits for Dealers



How many of your gasoline customers buy oil from you, Mr. Dealer? How many transients stop for gas but forget to ask about oil? How many are in too much of a hurry to wait for you to go back into the garage for the oil?

Build up your oil trade by putting a Tokheim oil wagon right out beside your curb gasoline pump. It is a powerful silent salesman, works without salary, helps you to give quick service and shows that you are the most-on-the-job garageman in town.

This Tokheim Oil Wagon is a great trade winner. It's as necessary for oil selling as a curb pump is for gasoline. It increases your profits and saves your time. It is the kind of equipment that pays for itself.

If you need a curb post gasoline outfit get our 30 per cent discount proposition on the Tokheim outfit No. 24. Find out about our new factory-to-user selling plan that saves you $69.30 on a 180 gal. outfit—other sizes in proportion. Find out about the high quality and durability of Tokheim outfits—none better made.

Write today for full details and prices.
We can help you make more money. May we?

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TOKHEIM Outfits-Highest Quality-Built Right for 16 Years

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THE NEWEST ADDITION TO THE BIG FAMILY OF

Wayne
Honest Measure Pumps

A Two Gallon Sidewalk Pump

embodying all of the exclusive Wayne Features and a size

That Meets a New Demand

Designed especially for sidewalk installation, the new two gallon Wayne Gasoline Pump is provided with circular, weather-proof housing and counter-balanced, telescoping doors.

Suction line is provided with a set of DOUBLE BRASS VALVES,—something upon which the accuracy of every measuring pump primarily depends.

CONTINUOUS ACTION is another important feature,—no backward strokes required.

Measures quarts, half gallons, gallons or two gallons—quantity stops being operated by simply turning regulator lever to right or left. Positive, quick,—easy in operation.

A twenty gallon clock dial discharge register shows each gallon pumped. Computer shows operator fractions of gallons pumped. Has also a 100,000 gallon meter which accurately records all gasoline passing through the pump up to this amount.

A Wayne special filter, guaranteed perfect, separates water and other impurities from gasoline and insures clean, pure, powerful "gas" to every customer.

Write for detailed descriptions of these and other features

WAYNE OIL TANK AND PUMP CO., 508 Canal St., Ft. Wayne, Ind.

STOPS RATTLES!

"Takes the Rattle and the Sag Out of Doors"

Are the doors of your car loose-fitting? Do they rattle or sag or refuse to remain closed?

Bennett "Holdfast" Door Fasteners completely eliminate door rattles and their cause, by forcing the door snugly into alignment from any direction. They take up perfectly any tendency a door may have to sag or draw back from the lock. They make loosely hung doors snug fitting and free from vibration and rattle.

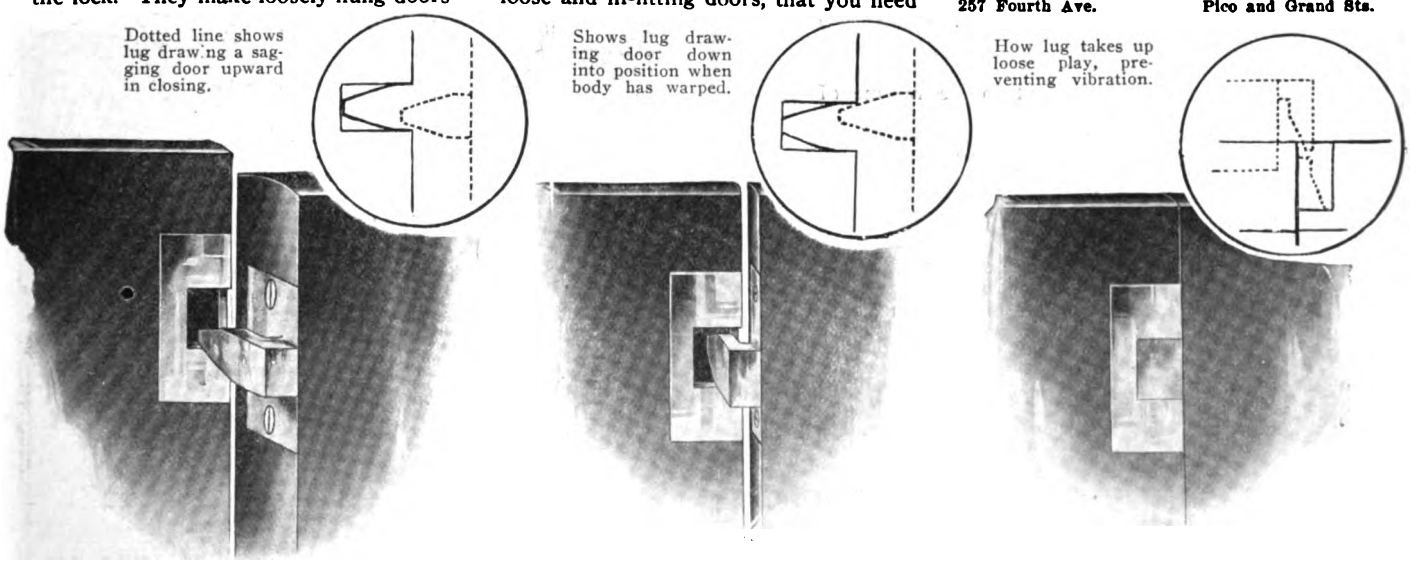
Easy to install. Out of sight and smaller in size than the door bumpers now on your car. List price per set 50 cents. Literature upon request.

JOBBERS AND DEALERS. Here is a practical device that is so obviously the right thing to overcome rattling due to loose and ill-fitting doors, that you need merely hand it to a motorist with a word of explanation and he sees at once that he should have it. Write for discounts.

MANUFACTURERS—Samples for test purposes will be sent upon request.

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LOS ANGELES
Pico and Grand Sts.



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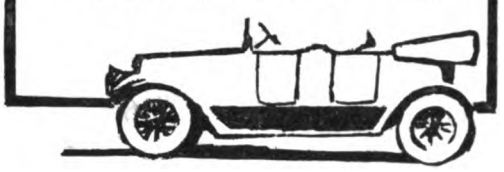
You Can Sell Auto Namel to Every Car Owner that Comes Into Your Store



For $5.00 with this amazing new chemical discovery, he can refinish his car in one night to look like new.

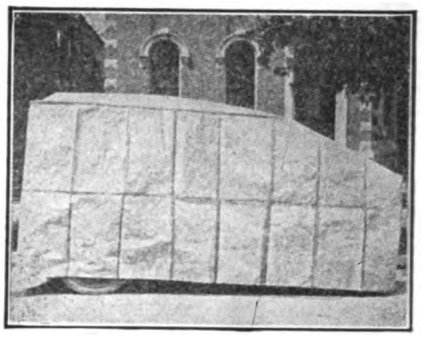
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is the only product of its kind on the market.
Not a paint although applied with a brush.
One coat equals four of ordinary paint.
Dries overnight into brilliant coating.
Tough, undentable, and smooth as glass.
Unites with metal and wood on new principle.
Can be applied by anyone.
In jet black and eight colors.
We can prove Auto Namel does all we claim.
Write for details and our proposition.



AUTONAMEL CO.
95-99 St. Paul St. Rochester, N.Y.

Kennedy Auto Covers



The season is at hand when automobile owners will store their cars. These cars should be protected. We manufacture an AUTO COVER designed especially for this purpose. The cover is made of heavy durable paper, is securely reinforced to prevent tearing, and completely covers the car. This protects the car from DUST, DIRT, COLD and MOISTURE. KENNEDY STORAGE AUTO COVERS also protect tires and preserve the life of the rubber by excluding light.

We also make a cover of lighter weight paper, and without the reinforcement, which gives good service where the cover is not expected to be used more than once. These covers sell at $2.00 per dozen less than our reinforced covers.

Five passenger covers will cover the popular priced touring car and roadster with wheel base up to 115 inches. For larger cars the seven passenger size is preferable. Ford covers are for cars with short wheel base.

Get busy now! Order a supply and be prepared for this trade.

We ship in lots of six or more. Your order will be given prompt and careful attention.

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☐ Pennsylvania
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You Can Start Your Engine Quickly in Coldest Weather

It is a well known principle that gasoline must vaporize before it will ignite. This requires heat.

THORWALD'S ELECTRIC CARBURETOR HEATER

Will boil the gasoline in any carburetor in from ONE to TWO MINUTES

This device will make your engine start as quickly and as easily in winter as in summer, and will save the terrible strain cold weather puts on the storage battery.

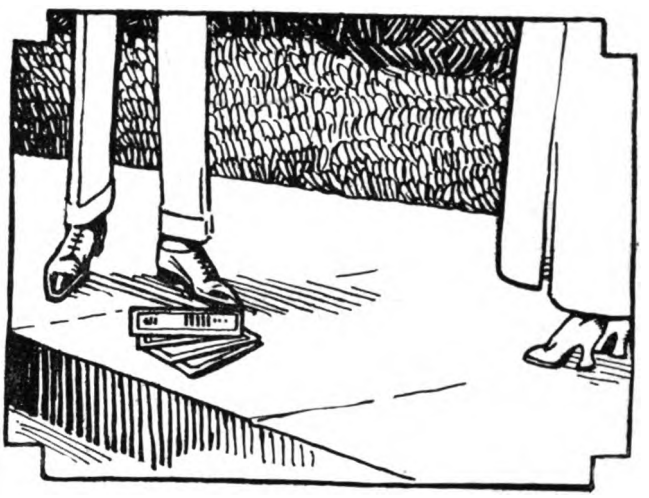
It is easily installed and can be attached to any carburetor. Connects with a switch on the dash. It is guaranteed to give satisfaction. Price $5.



THORWALD'S ELECTRIC
Carburetor Heater

E. H. Sprague Mfg. Co., Mfr.
Omaha, Neb.

Dealers: **You don't have to convince the auto user that he needs this carburetor heater. All he wants to know is that it will deliver the goods, and we guarantee that. Stock this device now. Liberal profit. Write us today.**



You Wouldn't Leave $1000 Worth of Liberty Bonds Loose on the Sidewalk

But if you saw one of your customers—an owner of a Buick car—drop bonds to that value in the street, you would advise him at once to lock them up.

All Buick Cars—Worth Just as Much—Should Be Protected at the Curb by a

BUICK Center Control Positive Transmission LOCK

It is just as much your duty to advise your customers to protect their Buick cars, with a thief-proof BUICK Positive Transmission Lock, as it would be to put their money in a safe place.

BUICK Positive Transmission Locks are absolutely thief-proof. They lock the cars where locks hold. With the gears held firm in neutral, no thief can drive away with a Buick Car.

Liberal discounts for dealers—and *paying sales. Write for complete details.*

THE NORTH SIDE BUICK SALES COMPANY
918-926 Sheridan Road, Chicago, Ill.



Price $6.50

Worth as Much as Your Car the First Theft It Prevents



THE ONLY PLUG IN THE WORLD BUILT FROM THE BOTTOM UP

REVOLUTIONIZES IGNITION

This amazing Power Spark Plug is built like a dynamo with an independent inside steel shell. This means more power and increased mileage. La French will carbon less, and in fact is practically indestructible. No porcelain to break—the wonderful Nixite insulation process is used throughout. Sold in complete sets only.

Price $1.25 each plug. In Canada $1.50. See your dealer or write the factory.

DEALERS AND DISTRIBUTORS

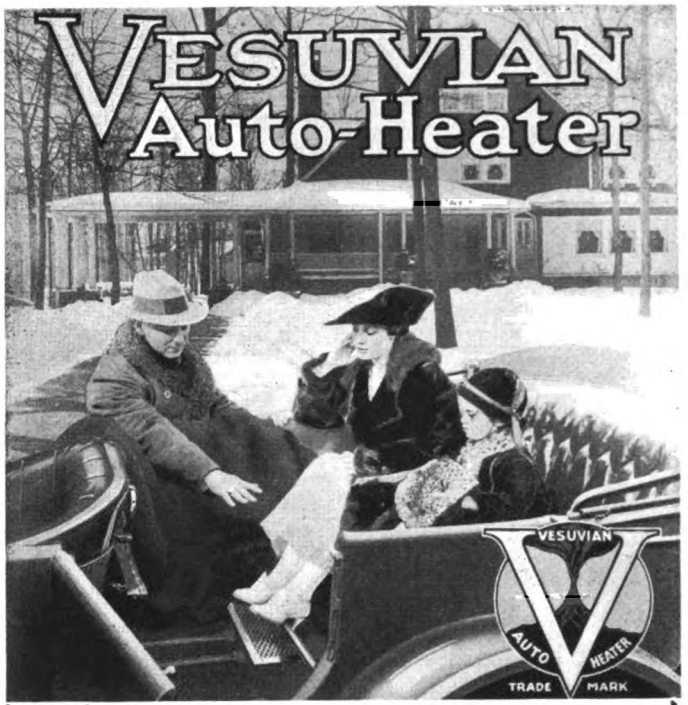
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LA FRENCH POWER SPARK PLUG COMPANY

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LA FRENCH POWER SPARK PLUG

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CASH IN ON COLD WEATHER

by selling the one accessory that is today a winter necessity—the

VESUVIAN Auto Heater

sells easily because it meets a real demand. Car owners want to drive in comfort **all** the year around. The Vesuvian makes comfortable riding possible.

The Vesuvian will outlast a car. There is no upkeep because it utilizes the heat from the exhaust gases—it heats up 50% quicker and gives 50% to 100% **more** heat than any heater made—no odor or escaping gases. No scorched robes or clothes. Absolutely reliable. Amount of heat easily regulated. Made in three styles:

Style A, Floor Type.....$20.00
Style B, Special Ford Type..$10.00
Style C, Vertical (Upright)..$20.00

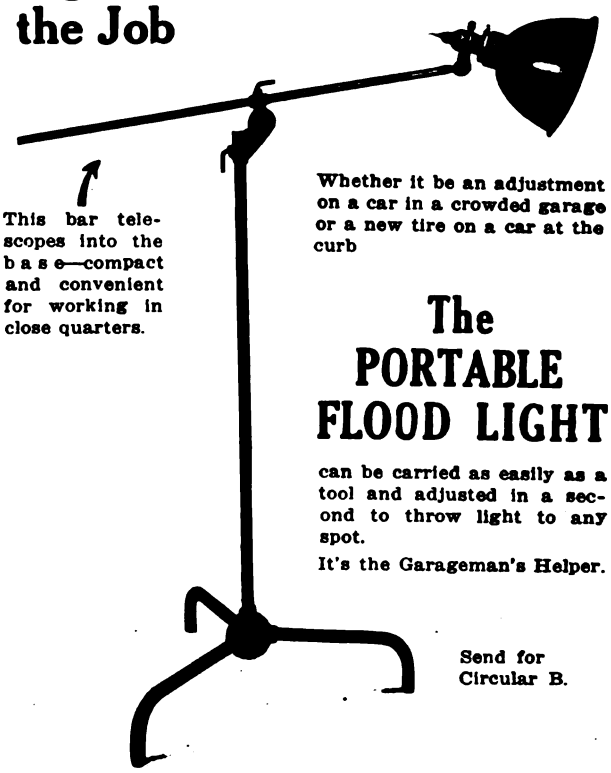
Dealers will find our selling proposition as broad and liberal as the Vesuvian is reliable. Write for our attractive proposition. Get your supply early so you will cash in 100% on this available business.

The Reliable Auto Heater Co.

Also Manufacturers of Vesuvian Electric Car Heaters and Vesuvian Electric Household Heaters

735 Guardian Bldg. Cleveland, Ohio

Light is a Tool—Suit it to the Job



This bar telescopes into the base—compact and convenient for working in close quarters.

Whether it be an adjustment on a car in a crowded garage or a new tire on a car at the curb

The PORTABLE FLOOD LIGHT

can be carried as easily as a tool and adjusted in a second to throw light to any spot.

It's the Garageman's Helper.

Send for Circular B.

COFFIN VALVE CO., Boston, Mass.

STATEMENT OF THE OWNERSHIP, MANAGEMENT, CIRCULATION, ETC., REQUIRED BY THE ACT OF CONGRESS OF AUGUST 24, 1912.

Of MOTOR WORLD, published weekly at New York, N. Y., for Oct. 1, 1917.

STATE OF NEW YORK } ss.
COUNTY OF NEW YORK }

Before me, a Notary Public in and for the State and county aforesaid, personally appeared E. M. Corey, who, having been duly sworn according to law, deposes and says that he is the Treasurer of the Class Journal Co., Publishers of MOTOR WORLD, and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management (and if a daily paper, the circulation), etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, embodied in section 443, Postal Laws and Regulations, printed on the reverse of this form, to wit:

1. That the names and addresses of the publisher, editor, managing editor, and business managers are:

Publisher, The Class Journal Company, 239 West 39th Street, New York.
Editor, S. P. McMinn, 239 West 39th Street, New York.
Managing Editor, David Beecroft, 239 West 39th Street, New York.
Business Manager, Charles B. Shanks, Kew, New York.

2. That the owners are: (Give names and addresses of individual owners, or, if a corporation, give its name and the names and addresses of stockholders owning or holding 1 per cent or more of the total amount of stock.)

OWNERS—United Publishers Corporation, 243 West 39th Street, New York City.

STOCKHOLDERS—H. M. Swetland, Montclair, N. J.; C. T. Root, 231 West 39th St., New York City; C. G. Phillips, 171 Cooper Ave., Upper Montclair, N. J.; W. H. Taylor, Park Ave., Montclair, N. J.; A. C. Pearson, 231 West 39th St., New York City; J. M. Phillips, 171 Cooper Ave., Upper Montclair, N. J.; W. H. Lindsay, 231 West 39th St., New York City; Elizabeth S. Mekeel, 98 Upper Mountain Ave., Montclair, N. J.; Fritz J. Frank, 231 West 39th St., New York City; M. C. Robbins, 231 West 39th St., New York City; W. I. Ralph, 231 West 39th St., New York City; George H. Griffith, 231 West 39th St., New York City; F. T. Root, 231 West 39th St., New York City.

3. That the known bondholders, mortgagees, and other security holders owning or holding 1 per cent or more of total amount of bonds, mortgages, or other securities are: (If there are none, so state.)
None.

4. That the two paragraphs next above, giving the names of the owners, stockholders, and security holders, if any, contain not only the list of stockholders and security holders as they appear upon the books of the company but also, in cases where the stockholder or security holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting, is given; also that the said two paragraphs contain statements embracing affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner; and this affiant has no reason to believe that any other person, association, or corporation has any interest direct or indirect in the said stock, bonds, or other securities than as so stated by him.

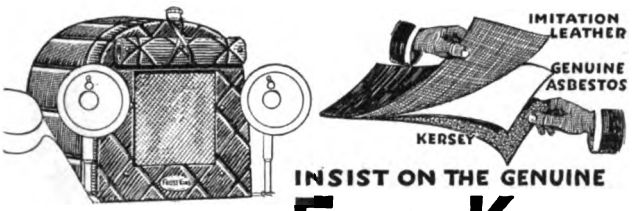
5. That the average number of copies of each issue of this publication sold or distributed, through the mails or otherwise, to paid subscribers during the six months preceding the date shown above is ..... (This information is required from daily publications only.)

E. M. COREY.
(Signature of editor, publisher, business manager, or owner.)

Sworn to and subscribed before me this 27th day of September, 1917.
(Seal.)

L. F. DAY.
Notary Public, Queens Co. Clerk's No. 1284
Certificate filed in New York Co. No. 266
New York Register No. 8205
My Term Expires March 30, 1918.

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INSIST ON THE GENUINE

FROST KING

Asbestos Insulated Radiator Cover

This high-grade radiator and engine cover will save enough *more* gasoline to many times offset the cost of its superior construction.

It has an extra thick layer of long fibred heavy Kersey, having great insulating properties. Next comes Asbestos, which absolutely keeps out cold and is the most remarkable heat retaining material known. Good quality waterproof Imitation Leather forms the outside covering.

For double wear, better appearance and better protection get the Frost King. Prices $2.75, $3.25, $5.00 up. Order early.

Dealers, order your Frost Kings now from your jobber. If he can't supply you, write us for samples and net prices.

Manufactured exclusively by

The Cincinnati Auto Specialty Company

Dept. W107, Cincinnati, Ohio, U.S.A.

ASBESTOS FROSTKING INSULATED

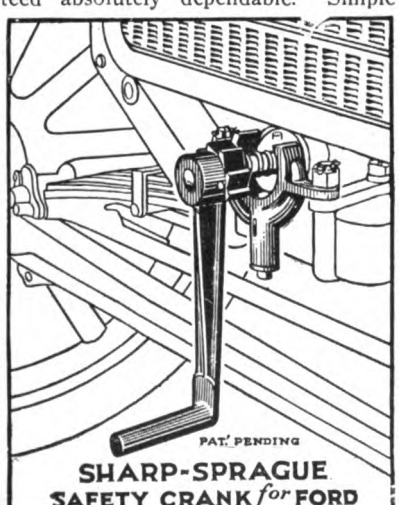
You Can't Get Hurt With This Crank

No matter how much the engine kicks, your arms, legs and face are safe.

Sharp-Sprague Safety Crank

eliminates all danger of injury from back-firing or early explosions. Guaranteed absolutely dependable. Simple yet durable, instantly replaces the standard Ford equipment and can quickly be attached by any car owner.

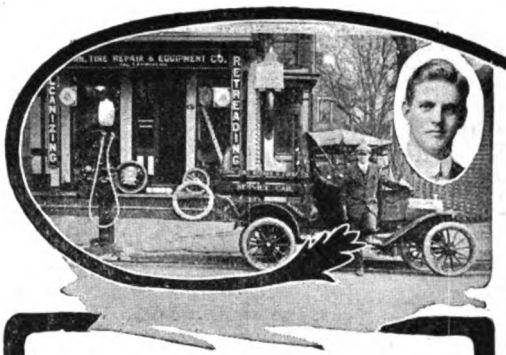
It costs only $5 to play safe. Put this safety crank on your auto now.



DEALERS:

Every Ford owner knows the danger in cranking. This device "takes" instantly—sells itself. This is your opportunity. Liberal profit. Write us for particulars at once.

E. H. Sprague & Co.
Omaha, Neb.



The Haywood Shop of Paul R. Fredericks, Wallingford, Conn.

$400 a Week

"Just a year in the business and now doing $400 to $450 a week at a good round profit" tells the story of this Haywood shop. Scores of men have found their independence in the Tire Repair business, have opened Haywood shops and are making big money. The coupon below or a post card with your name and address will tell you how to start.

More Men Wanted

30,000,000 Tires to Repair

The demand for tire repairing is now so great that more Haywood stations must be established at once throughout the country. We want capable, energetic, ambitious men in charge of each—men who are dependable—competent. **You can have this opportunity. Make $3,000 a Year or Better:**

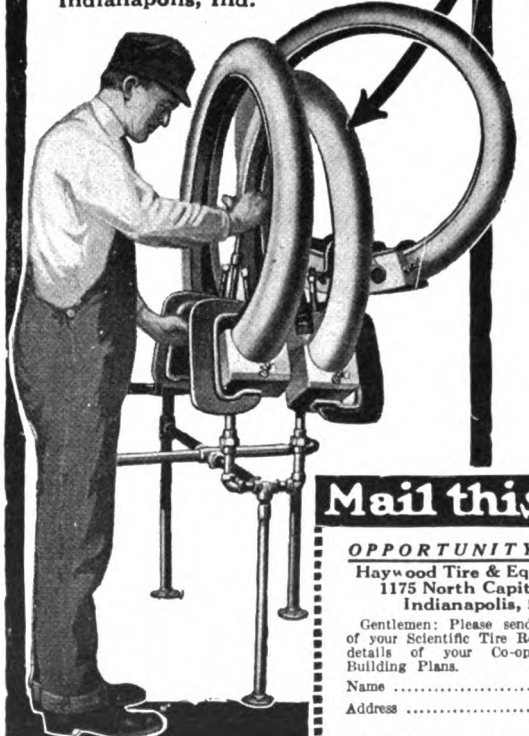
A Wonderful Opportunity

The coupon—your name and address, brings full particulars. How to start. How to tie up with the Haywood Service. We'll give inside facts and figures about costs and profits—explain in detail our Co-operative Business Building Plans. Write today without fail. Learn how you can start at once.

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The Money Making Haywood Machine

Get the Facts



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Indianapolis, Indiana

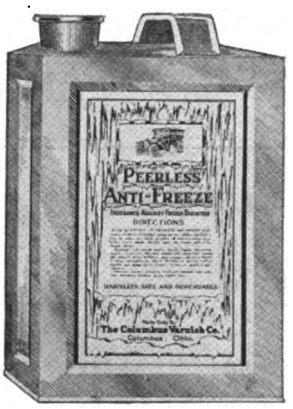
Gentlemen: Please send full particulars of your Scientific Tire Repair Service and details of your Co-operative Business Building Plans.

Name .....

Address .....

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Peerless Automobile Specialties
Make Old Cars Look Like New



Makes Winter Driving a Pleasure

Does Not Evaporate or Lose Its Strength

One-Half Water and One-Half Peerless Anti-Freeze Protection at About 15° Below Zero

Fill your radiator at the first cold spell, see that all connections are tight, then drive in comfort all winter. Protects you from a cracked cylinder, radiator or pump, stays warm longer than water or alcohol.

BUY YOUR SUPPLY EARLY

Other Goods Are Needed for Comfort

The Name of Each Product Tells Its Use

Peerless Mohair Top Dressing	Peerless Fender Japan
Peerless Leather Top Dressing	Peerless Mirroroid
Peerless Ford Top Dressing	Peerless Gasket Shellac
Peerless Cushion Dressing	Peerless Lining Dye
Peerless Lamp Enamel, gloss or dull	Peerless Rim Paint
Peerless Cylinder Enamel, black or gray	Peerless Tire Paint
Peerless Black Japan	Peerless Liquid Wax
	Peerless Auto Body Polish
	Peerless Battery Box Black
Peerless Color Finishing Varnishes	White, Straw Color, Yellow, Red, Blue, Gray, Brewster Green, Black

Used and Endorsed by Over 8,000 Automobile Painters. Sold by Dealers, Garages and Hardware Stores, Jobbers of Auto Accessories.

Peerless Automobile Specialties are sold and manufactured only by

THE COLUMBUS VARNISH COMPANY
Columbus, Ohio, U. S. A.

"Break-Not" Battery Tester



All live dealers carry **"Break-Not"** Battery Testers! Are you one of the **"Break-Not"** Family? The **"Break-Not"** is recognized as one of the biggest selling Accessories today. All the Supply Houses, Garages, Battery Service Stations, and Hardware Dealers are handling the **"Break-Not."**

The construction of this instrument is so far superior to every other Syringe Hydrometer now on the market, that the purchaser will have nothing else once he has seen the **"Break-Not."**

Price complete, packed in strong mailing tube **$1.00**

Send for our circulars and catalog of interest Accessories!

E. EDELMANN & CO.
363 E. Ohio St. Chicago

BATTERY CHARGING BRINGS BIG PROFITS



$139.50 Profit The First Month

Here's the record of one HB Battery Charger, installed by the Rex Battery Service Station, 2216 N. California Ave., Chicago. **Batteries charged the first month, 210. Income at 75c per battery, $157.50. Total current cost, $18.00. Net Profit, $139.50.**

Not many, perhaps, are doing so well as this, but owners everywhere are clearing $20.00 to $60.00 a month right along.

The HB Battery Charger is a full 500 Watt Equipment, guaranteeing quick charging and quick profits. City current operates. Belt driven equipment can be supplied for battery charging and lighting if desired. Recharges one to seven batteries at one time, at cost of 12c to 15c per battery. Autoists pay 75c to $1.50. At least $4.50 profit each capacity run.

$15 Puts This Money-Maker in Your Garage

Balance in eight monthly payments of $20 each, which earnings will more than pay. Tear out this ad and mail for full particulars, or send initial payment of $15 with trial order. You run no risk. There's an absolute money-back guarantee if machine is not absolutely satisfactory.



An HB Charger will be one of the best money-makers in your garage. Write or order today.

Hobart Brothers Company
Box 4102 Troy, Ohio

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NASSAU

Construction, Fit and Finish are the Dominant Features of all Nassau Winter Tops.

Prompt Deliveries of Tops for

Dodge
Ford
Buick
Chandler
Scripps-Booth
Ross

Discounts to Dealers

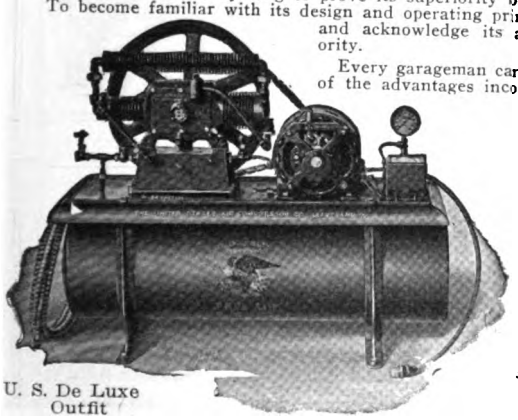
DETACHABLE LIMOUSINE CO.
Hempstead-on-Long Island, N. Y.

TWO-STAGE AIR COMPRESSORS

BEST of the *GOOD* Compressors

ONE air compressor stands out boldly from the varying mass manufactured because refined and improved in 14 important details.

It is no longer said that "an air compressor is an air compressor" because the United States *two-stage* machine has long since been on the market sufficiently long to prove its superiority beyond question. To become familiar with its design and operating principles is to see and acknowledge its absolute superiority.



U. S. De Luxe Outfit

Every garageman can get the benefit of the advantages incorporated in the United States *two-stage* compressor because the line includes machines in sizes and outfits to meet every need.

Write for descriptive literature — also information regarding the U. S. *single stage* compressors.

The United States Air Compressor Co.
Carnegie Ave., Cleveland

TWO-STAGE AIR COMPRESSORS



25¢ *each*

The HANDY TERMINAL Eliminates *All* Terminal Troubles—

No burned fingers—no lost nuts in drip pan—no loose connections

Most ignition troubles can be traced directly to loose connections caused by vibration and jar. The Handy *can't* work loose—the greater the vibration the tighter the jaws of the Handy grip—the better the electrical contact.

The jaws of the Handy are threaded on the inside and engage the threads of the Spark Plug center bolt. One motion raises the ring, compresses the steel spring, releases the terminal and lifts it from the spark plug. There are no nuts to tighten or loosen or fish out of the drip pan. No tools are required. Can be attached or detached in *one second*.

The method of fastening the magneto cable insures a permanent connection. The ferrule is fitted to the cable and the stripped wire firmly held by a copper clip making a non-soldered connection that can't work loose.

The Handy is the last word in convenience and efficiency. Made in 3 sizes to fit *every* make of spark plug, for pleasure cars, motor cycles, trucks, motor boats, air planes, etc.

Dealers and Garage Men—

Because the Handy Terminal eliminates ALL terminal troubles and is a great time and trouble saver it is a great seller. National advertising campaign starts October 13th—attractive dealer helps. Write for attractive dealer's proposition.. If your jobber can't supply you with the Handy, send us his name and we will see that your requirements are filled promply. Get your share of this business now—Write Today.

THE FRANCIS-RAND CO.
Manufacturers of
HANDY PRODUCTS
506 Erie Building, CLEVELAND, U. S. A.

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Overhauling Time is Dixon Time

Now is the time to give your customers' cars a general winter overhauling. Put Dixon's Graphite Grease No. 677 in the transmissions and differentials and you'll be serving your customers' best interests and yours; for Dixon-dependability means satisfied customers.

Write to us for Dixon's Dealers' Deal, 111-G.

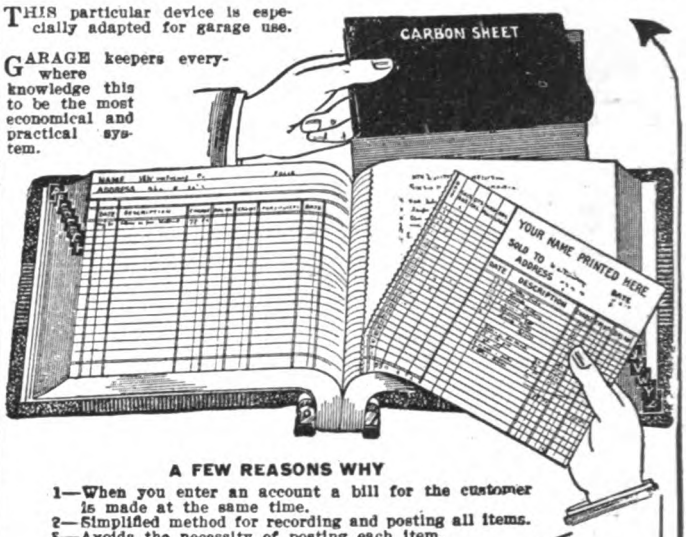
JOSEPH DIXON CRUCIBLE CO.
JERSEY CITY, N. J.
Established 1827

SAVE TIME AND MONEY

Our SPECIAL GARAGE Bookkeeping Plan Gives You the HIGHEST Possible EFFICIENCY

THIS particular device is especially adapted for garage use.

GARAGE keepers everywhere knowledge this to be the most economical and practical system.



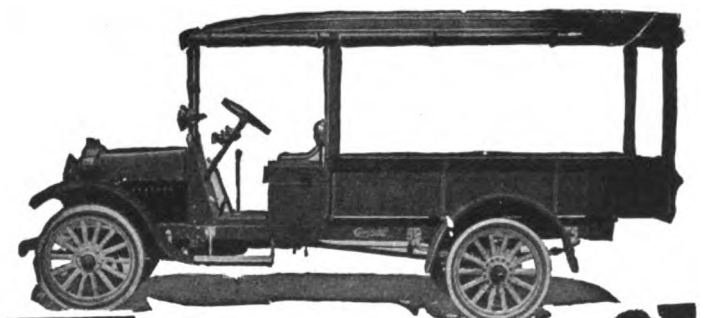
A FEW REASONS WHY

1—When you enter an account a bill for the customer is made at the same time.
2—Simplified method for recording and posting all items.
3—Avoids the necessity of posting each item.
4—Requires the minimum amount of labor.

THIS PAGE IS THE CUSTOMER'S BILL
THE ONE UNDERNEATH IS YOUR COPY

SEND FOR DESCRIPTIVE FOLDER AND FULL PARTICULARS

THOMAS J. HARTON & CO., Inc., 212a Church St. NEW YORK
Loose Leaf Specialists



Commerce

TRUCKS
1 TON CAP

A Year Ahead of Other Trucks

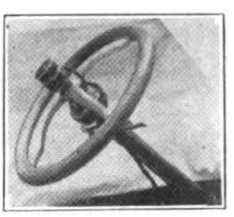
The only truck having everything necessary on it—when you buy it

Three types of bodies for all models—Remy Starting and Lighting—Stewart Vacuum System—Pierce Governor—Windshield—Bumper.
Commerce Truck Motor, Detachable Head—Torbenson Rear Axle—Detroit Steel Products Company Springs.

One-Ton Chassis	$1340
With Express Body	1375
With Post Top and Storm Curtains	1450
With Standard Stake Body	1490

The Commerce Motor Car Company
DETROIT MICHIGAN

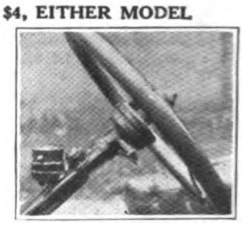
W. H. Brinkerhoff, Eastern Dist. Mgr.
Belmont Ave., Elmhurst, Long Island, N. Y.



HANDY DUBOLITE and DIMMER COMBINED

Two bright, brilliant lights, even at low engine speed, using regular bulbs. Guaranteed absolutely reliable. Quick sales and a good profit for dealer.

PRICE $4, EITHER MODEL



Registered U. S. Patent Office.
Patented Aug. 14, 1917

HANDY DIMMER CO.
17 Library St.
Grand Rapids, Mich.

Canadian Distributors:
Walkerville Hardware Company
Walkerville, Ont.

CONAPHORE
LONG HORN
KIMBALL AUTO JACK
G-P MUFFLER CUT-OUT
CASSCO ENGINE-DRIVEN TIRE PUMP
TENION RINGS

Edward A. Cassidy Co.

A Selling Corporation
Madison Ave. and 40th St., New York City

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Help Your Customers Save Half Their Tire Expense

and at the same time increase your business by selling them an article which they will continuously buy because it gives service and satisfaction.

THE Fisher PATENTED "RIM-GRIP" SUB-CASING

Holds Rim-Cuts **Prevents Blow-Outs**

Reinforces Tires where Blow-Outs and Rim-Cuts are most likely to occur. Doubles the Mileage of Auto Tires.

Does Not Chafe or Heat

Holds All the Pressure



May be Used to Wear Out Several Old Tires

Successful and Economical

The cost of two blow-outs pays for a Fisher Rim-Grip Sub-casing and practically ends your tire troubles. Investigate today.

Fisher Manufacturing Co.

1533 N STREET LINCOLN, NEBRASKA

Seal-Tite PISTON RING



Go Fast Over the Counter *for* Sales

The one-piece piston ring that sells at a moderate price and will not leak, goes fast over the counter to waiting trade.

SEAL-TITE is that kind of a ring. **Guarantees** more power, perfect compression, perfect lubrication, longer life to the motor, saving of gasoline and lubricating oil, absence of smoke, and clean spark plugs.

All individually cast and inspected. Made in every popular size and over-size. **Perfection guaranteed.** As low in price as 75c.

Write for free illustrated literature, and, if a dealer, ask for liberal proposition.

Seal-Tite Piston Ring Co., Inc.
1704 East Lake Street
Minneapolis Minnesota



LIMOUSINE INTERIORS

May be made to look like new and several years of service added through the use of

Invincible

Seat Covers

Many cars which otherwise would be put away for the winter because of their dingy appearance can thus be kept in service, adding extra profits to the dealer's pocket.

You can sell these seat covers and feel sure that they will give complete satisfaction. Made in many different styles and colors, hand tailored to fit every model of car.

If you do not already have our catalog send for it today.

The PETERS & HERRON DASH COMPANY

77 S. Gift Street Columbus, Ohio

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WHY DON'T YOU DEMAND



BOSCH MAGNETO IGNITION

BOSCH MAGNETO CO., 224 West 46th St., NEW YORK

Service Stations in Every State

Stop Losing Money on Used Cars

Get the

National Used Car Market Report Service

Published by

The Chicago Automobile Trade Association
Chicago, Illinois

"The Most Advanced Truck in America"

Its magnetic transmission effects a great saving in wear and tear on the motor, chassis and tires —and substantial economy in operating costs.

Two Ton Truck....$3300
3½ Ton Truck.....$4000

Bourne Magnetic Truck Company
Sedgley Avenue, at North 17th Street
Philadelphia, Pa.

Sales will be easier to make and more frequent if the car you sell is equipped with the

C-H MAGNETIC GEAR Shift

Let us tell you all about this wonderful device. Write for booklet.

THE CUTLER-HAMMER MFG. CO.
MILWAUKEE, WISCONSIN
World's Largest Manufacturers of Electrical Controlling Apparatus

Bunting Bearing Bronze IN Cored Bars



Bunting Bearing Metal is standard today with both Manufacturer and Repairman. Is for sale by most any Jobber or can be purchased direct from us.

Ask for Pamphlet "Y." STOCK SIZES

Piece No.	Outside Diameter	Inside Diameter	Length	Approximate Weight
A	1	½	12	2
B	1¼	½	12	3½
C	1½	¾	12	5
D	1¾	¾	12	7
E	2	1	12	8½
F	2¼	1¼	12	10
G	2½	1½	12	11½
H	2¾	1¾	12	12¾
I	3	2	12	13¾
J	3¼	2¼	12	15¾
K	3½	2½	12	17
L	4	3	12	21
M	4¼	3¼	12	20

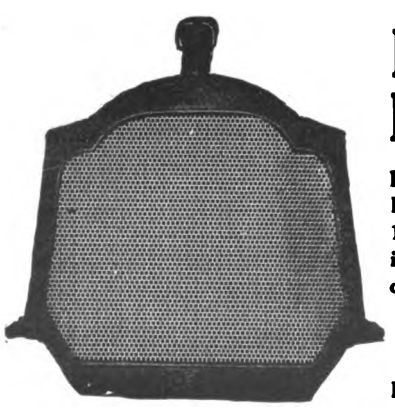
The Bunting Brass & Bronze Co., 717 Spencer Street Toledo, Ohio

The Hal Twelve

SMOOTH POWER

Seven-Passenger Touring Car or Roadster, $2600. Limousine or Town Car, (Leon Rubay bodies), $4500. Cleveland prices.

Hal Motor Car Company, Cleveland, Ohio



Fedders Radiators

Fedders quality is largely the result of 18 years' specializing in radiator production.

Fedders Manufacturing Co.
Buffalo New York





"UNION" AUTO FUSE MATERIAL



Fuses are designed to give positive protection to wiring and fittings in all types of autos with the least amount of potential drop



FUSE BOX

SPECIAL PARTS AND STAMPINGS

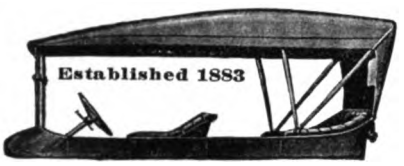
Send B/Prints or Samples and let us quote prices.

CHICAGO FUSE MFG. CO. CHICAGO AND NEW YORK

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AUTO TOPS FOR ALL CARS

We can save you ⅓ the cost of a new Top



Write us at once. Ford Tops, One Man Tops, Seat Covers for all cars, Top Covering for any car, Radiator and Hood Covers, Auto Tires and Tubes, Wheels, Fenders, Racing Seats, etc.

Write us at once; let us teach you how to save money

BUOB & SCHEU
225 Webster St., Cincinnati, O.

Jackson Rim Company

Jackson, Michigan

Demountable Rims

Plain Clincher and All Styles of Q. D. Demountables, Straight Side or Clincher

Controlling Perlman Demountable Rim Patents

OWEN MAGNETIC

WHAT IS YOUR UNDERSTANDING OF FLEXIBILITY?

Flexibility means (according to the advertisements) the ability of a car to slip from low speed into high, or from high into low, with extreme smoothness and celerity.

Flexibility—approached in other cars—is actually attained in the Owen Magnetic.



BAKER R & L COMPANY
Cleveland, Ohio
Manufacturers of
OWEN MAGNETIC MOTOR CARS
Salesrooms— New York Boston Philadelphia Chicago

TRADE MARK

SEXTONS CASTOR MOTOR OIL

"Your Motor's Best Friend"

Send for Catalog. Dealers—Distributors, Write

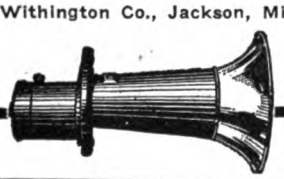
SEXTON OIL CO., 1171 Peoples Gas Bldg., Chicago, U.S.A.

SPARTON

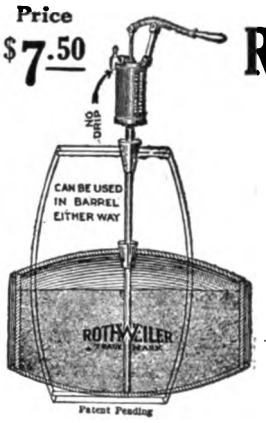
Quality Products

Sparton Motorhorns—hand-operated and motor-driven.
Sparton Gasoline Vacuum System.
Sparton honey-comb Radiators and Sparton Radiator Fans.

The Sparks-Withington Co., Jackson, Mich., U. S. A.



Price $7.50



Rothweiler Pump

Empties a Barrel or Drum Completely

No Waste ***No Drip***

Good for Oil, Gasoline, Turpentine, Light Paint, etc.

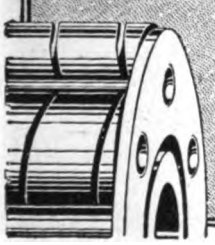
Works Easily, Quickly and Efficiently

A Great Trouble Saver

ROTHWEILER & CO.
Seattle, Wash.

HYATT QUIET

***-the* logical bearing**



***for* Motor Cars Motor Trucks and all Motor Vehicles**

UNITED

DOES MORE THAN ANY 6-TON TRUCK CAN DO

Get the facts about United Trailer Tractor. Does everything a truck can do and many things a truck can *not* do. *If you need a one-truck service,* the United is most economical. *If you need a fleet* use the United and as many trailers as you require. We supply any type of trailer body equipment. Write for catalog.

6-ton capacity
$2490



A Tractor—not merely a short wheelbase truck

Dealers: There is an enormous market on the United. Get our liberal proposition.

UNITED MOTORS COMPANY
Mfrs. United Tractors and Trucks
671 North St., GRAND RAPIDS, MICH.

6-ton Trailer Tractor

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The Pullmore Front Drive TRUCK is here

Union Arcade, Pittsburg, Penna.

Quality in Motor Trucks

It has been our endeavor to create a commercial vehicle that would excel first of all in the quality of the material used, and, second, in the economy of its operation.

Our reputation for producing the most lasting truck is recognized by our many users.

We offer for your convenience the following sizes:

1½-ton 3½-ton
2-ton 5-ton
7-ton

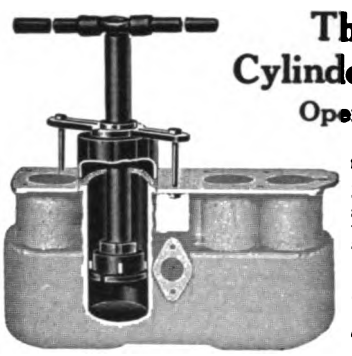
Hurlburt Motor Truck Company
133rd St. and Harlem River New York, N. Y.

90,000 SPRINGS IN STOCK—FOR EVERY CAR

VULCAN QUALITY

Write FOR CATALOG AND DISCOUNTS
Display Rack Free With Order For 12 Assorted

Jenkins Vulcan Spring Co.
Saint Louis, Mo.....1402 Chestnut St.
Minneapolis, Minn.....1024 Hennepin Ave.
Reading, Pa.....538 Franklin St.
Fort Worth, Tex.....786 Commerce St.
Sumter, S. C.....39 Caldwell St.



The Universal Cylinder Reboring Tool

Operates on Any Car

Rebores cylinder from start to finish without slightest taper, and perfectly round. Automatic and quick in action. Takes as much as 1/16" oversize in one operation, and completed job will be a smooth finished and true to 1/1000 of an inch.

Range of Expansion, 2½" to 5 1/16". Any type motor.

Write for free illustrated literature and details.

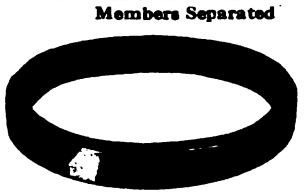
Specify Catalog No. 4.

For Sale by Leading Jobbers

THE UNIVERSAL TOOL COMPANY, Inc., Detroit, Michigan



Members Separated



Members Assembled

JOINTLESS Piston Rings

give your motor every atom of energy and power from your gasoline. Perfect compression—gas can't leak away. No dowel pins or exposed ends to score or scratch cylinder walls.

Only $1.00 each

For pleasure cars or trucks "Jointless" Rings mean complete motor efficiency, durability and gasoline economy. Write for Circular.

Detroit Piston Ring Co.
Detroit, Mich.



Miles Cheaper

Users Report Records of

8,000
10,000
12,000
15,000
Miles

Quaker City Rubber Co.
Philadelphia

THE FULTON TRUCK

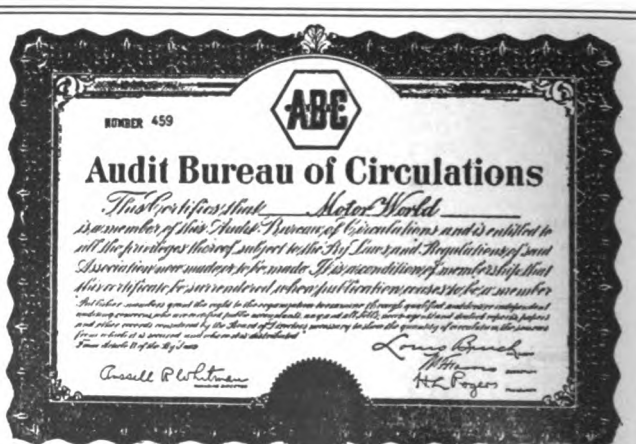
1½ Ton Capacity

Has created the world's standard in motor truck value

If you are interested in a real money making agency where selling resistance has been reduced to a minimum, communicate with us NOW.

Fulton Motor Truck Co., Farmingdale, L. I., N. Y.





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The Only Truck Attachment that Includes Unit, Cab and Body in one Job at one Price

$385

Graham Brothers All-3 UNIT-CAB-BODY Truck Attachment



Saves you $75 to $125 on body equipment. Write for booklet. Get our dealers' proposition.

Graham Brothers, Dept. E, Evansville, Ind.

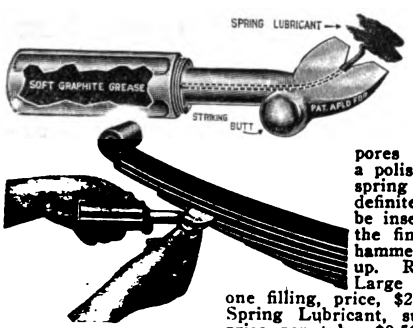
DETROIT BATTERIES

last approximately six months longer than the average battery. They are about 15 per cent more powerful in proportion to size and cost.

This is why their sale is now increasing on an average of over 60% every four weeks—a record no other battery has ever approached.

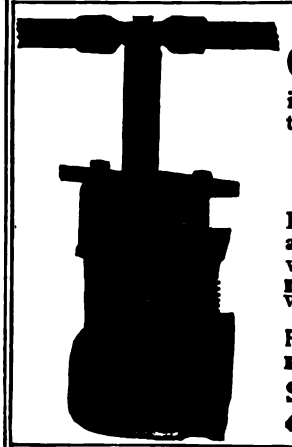
DETROIT BATTERY CO., Detroit, Mich.
Eastern Branch, 68th and Broadway, New York City

TOMAHAWK SPRING LUBRICATOR



Inject Graphite Lubricant between the leaves of the springs and get 100% easier riding from your car, without squeaks and danger of breaking springs. The Graphite works into the pores of the steel and makes a polished bearing between each spring leaf. It lubricates indefinitely. The Tomahawk can be inserted with the pressure of the fingers or a light tap of a hammer, if body of car is jacked up. Regular size, price, $1.25. Large size to lubricate a car on one filling, price, $2.50. Tomahawk Graphite Spring Lubricant, sufficient for 3,000 miles, price per tube, $0.50, also packed in display boxes, one dozen each.

Charles W. Manzel Co., 310 Beard Ave., Buffalo, N. Y.



THE STORM & O'HAIR
Cylinder Reboring Machine

is adjustable and will rebore practically all makes of

Automobile, Aeroplane, Motor Cycle, Light Marine, Tractor and Stationary Motors

It is simple, speedy and accurate and can be used by anyone familiar with tools.

Indispensable in any repair shop.
We furnish oversize pistons for all makes of motors.

FOR SALE BY LEADING JOBBERS
For further information address
Storm & O'Hair Company
426-27 W St. Thompson, Iowa



MOSLER VESUVIUS PLUG

"The Indestructible Plug"

Selling at $1.00 it offers the dealer an article he can stand behind to the limit, and sell his trade confident that he is giving them the best—making a worth while profit meanwhile.

WRITE US

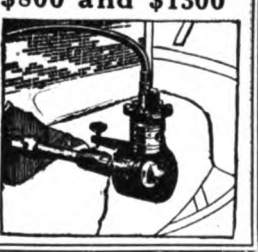
A. R. Mosler & Co., New York, U. S. A.

GEARLESS **DETROIT** CRANK-SHAFT Tire Pump
Pat. Aug. 25, 1915

960,000 PROSPECTS

WITH CARS BETWEEN $800 and $1300

Now ready for Briscoe, Dodge, Chandler, Hudson, Overland, Reo, Stearns, Saxon 1916, and Studebaker cars. On and off in a jiffy without tools. **Not a rubber diaphragm device.** Write for details. Dealers, ask for discounts.



Price $10

DETROIT ACCESSORIES CORPORATION
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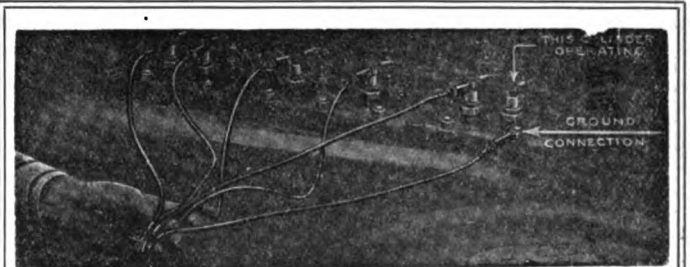
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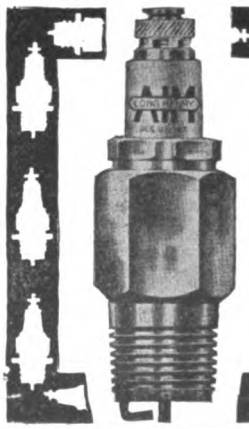


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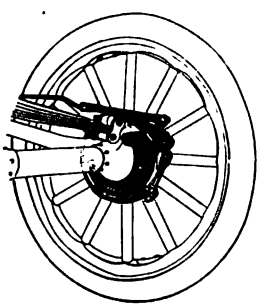
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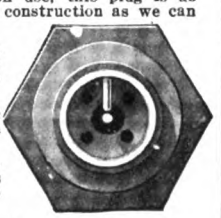
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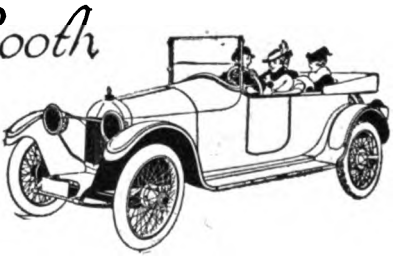
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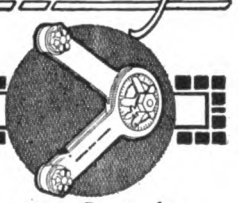


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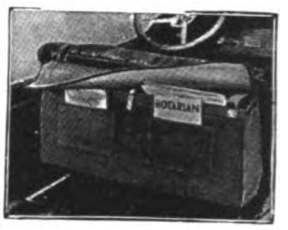
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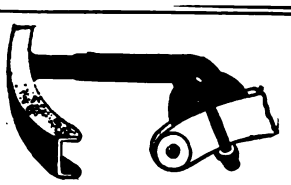
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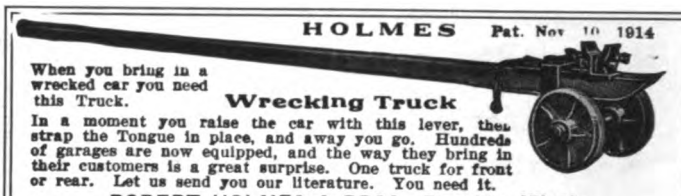
SAGER BUMPERS



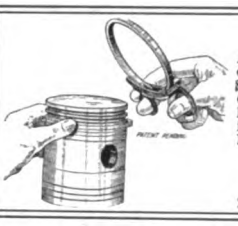
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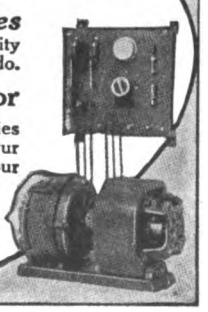
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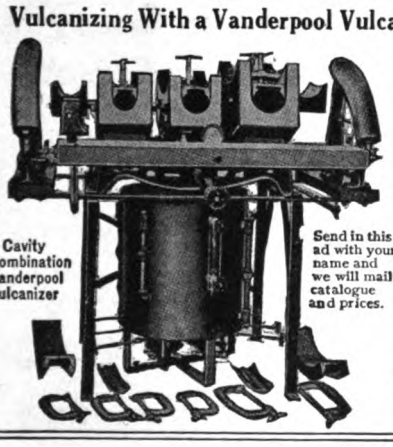
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243 So. 11th St., Lincoln, Neb.
ALL PARTS for all makes of cars, 50% OFF

SAMUEL L. WINTERNITZ & CO. AUCTIONEERS

Largest Liquidators of Motor Plants

RECTOR BUILDING CHICAGO, ILL.

AUTO GEAR CO.

MINNEAPOLIS, MINN.

SUPPLY TRANSMISSION AND REAR AXLE GEARS AND PARTS TO THE TRADE

Parts and Repairs
Tires

GEAR RINGS

For Self Starters. Gears of every description cut or made to Specifications.

THE ADAPT MACHINERY CO.
1620-30 Wabash Ave., Chicago, Ill.

RIMS—All New and Old Types

and parts for all makes of rims. Get my prices on spare rims locking rims, side rings, for any make of car. Quick service. Free rim information.

KASTNER RIM CO.
2125 Michigan Ave. Chicago, Ill.

500 PREST-O-LITE

Tanks, genuine, new, full—B, $8.00; E, $6.50. A deposit of 25% required on all orders.

BATTERIES

150 Starting and Lighting, $5.00 to $15.00.

STORAGE BATTERY EXCHANGE
103 E. Chicago Ave. Chicago

Automobile Flags

3 Cluster Indestructible Rubbered Flags, size 4 x 6, with Holder, list $1.50.
3 Cluster Silk Flags with Holder, $1.20. Dealers' price, 33 1-3 discount. Jobbers write for special proposition.

E. J. WILLIS CO., 85 Chambers St., New York

SECOND TIRES

MR. DEALER

Write or get our Proposition on Standard make factory Blemished Tires

Public Service Tire & Rubber Co. of N. Y., Inc.
1698 Broadway, N. Y. C.

We Are the Largest Buyers of

SCRAP RUBBER

ASK US FOR QUOTATIONS

E. BERS & CO.

10 Desbrosses St., NEW YORK, N. Y.
Phone 8231 Canal

TIRES

NEW FRESH STOCK

33 x 4 Plain Clincher	$11.50
34 x 4 Plain Clincher	12.75
35 x 4½ Plain Clincher	17.25

Prices of Other Sizes on Request

TIRE REPAIR & SUPPLY CO.
1429 Michigan Ave., Chicago, Ill.

ADVANCE TIRES

GUARANTEED 3500 MILES

30x3	$9.87	33x4	$20.80
30x3½	12.77	34x4	21.45
32x3½	14.98	35x4½	31.17

NON-SKID

We absolutely guarantee every tire for full mileage.

ELY AUTO EQUIPMENT CO.,
1902 Broadway, New York

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HUDSON SUPER-MILEAGE TIRES

Here is an unusual business opportunity that will appeal to the ambitious, wide-awake business man because it contains actual proof of its value.

OUR PROPOSITION

Within the next thirty days we will appoint about twenty men or firms in both Eastern and Western territory to represent us as exclusive factory dealers in the sale and distribution of "HUDSON" Super-Mileage Tires.

These appointments are worth from $500 to $1,500 per month to the men who are fortunate enough to get them, and for this reason in the selection of these representatives we will consider only men who are energetic, wide-awake business getters, with experience in handling men as well as in selling.

THE RECORD OF OUR OTHER DEALERS

About eight months ago we ran an advertisement similar to this one. A large number of applications were received and from these we selected the men who were given the dealerships.

The exclusive selling rights that were given out at that time have become very valuable to those who hold them. Over thirty of these men earned better than $1000 per month on the sale of "HUDSON" Super-Mileage Tires and have built up a well organized and permanently profitable business in their protected territories.

Here's your opportunity, if you are the right man. What others are doing you can do.

WHAT WE WILL DO FOR YOU

Every man who secures an exclusive dealership from us is immediately given the benefit of all the inquiries and sales in his territory. We furnish every dealer with complete sets of advertising matter and also cuts for advertising in local papers, and also the use of our Advertising Department Service, which will assist him to get out any Direct Advertising Plan that may increase the sale of "HUDSON" Tires in his territory. We give this service because our experience in the opening of new territory has taught us exactly what is necessary to insure the success of every man that we appoint.

TERRITORIES ARE BEING SNAPPED UP

Be the first to open a "HUDSON CUT-RATE TIRE STORE" in your territory, and with the price that "HUDSON 4,000 MILE GUARANTEED TIRES" cost, you will be able to virtually control the tire business in your territory.

HERE IS THE REASON

"HUDSON" Tires cost you only one-half as much as ordinary standard tires, still they are guaranteed 4,000 miles and this guarantee is backed up by a most liberal policy. It is not strange after all that hundreds of motorists are using "HUDSON" Tires and that more of them are going into service every day—just as fast, in fact, as our factories can turn them out.

4,000 MILE WRITTEN GUARANTEE with every TIRE

Adjustment made on mileage basis of 30 to 60 miles per day, depending on size of tire

JOBBERS' LOWEST NET PRICES

Tires	Non-Skid	Tubes	Tires	Non-Skid	Tubes	Tires	Non-Skid	Tubes
28x3	$ 7.25	$1.80	32x4	$14.75	$3.05	35x4½	$22.75	$4.10
30x3	7.60	1.90	33x4	15.75	3.10	36x4½	23.75	4.15
30x3½	9.85	2.15	34x4	16.55	3.20	35x5	27.20	4.95
32x3½	11.55	2.25	36x4	17.65	3.35	37x5	27.60	5.05
31x4	14.35	2.95	34x4½	20.75	4.00			

DON'T DELAY—WRITE QUICKLY

A great many men will read this page. If you can qualify for one of these exclusive territories, don't delay in writing us at once, giving full information about the territory, etc., you want.

BUY WHAT YOU NEED

Any order you care to send us will be cheerfully accepted and handled with all the enthusiasm that is accorded the many large stock orders that come every day. It will pay you to order in large quantities on account of the saving to you in express charges.

All orders must be accompanied by deposit of at least 25% in order to receive immediate shipment.

HUDSON TIRE AND RUBBER COMPANY

Dept. D., 1432 Michigan Avenue, Chicago

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Dealers Garage Men Car Owners

What about your tire expense?

Tires to-day are selling at very high prices. Why pay those prices when it is possible to secure used tires at a great deal lower price?

These used tires were originally guaranteed for 3000 to 5000 miles. Many have gone less than 600 miles. Some need to be repaired, others don't. The tires needing to be repaired are thoroughly renovated and strengthened in every weak spot.

It does not take much figuring to see the mileage they are still good for. Save money on your tire mileage.

Look at These Exceptionally Low Prices and Act Now:

28x3	$2.75	36x4	$7.50
30x3	2.85	33x4½	8.00
30x3½	3.95	34x3½	8.00
32x3½	5.00	35x4½	8.00
34x3½	6.00	36x4½	8.00
31x4	5.00	37x4½	8.50
32x4	5.50	35x5	9.00
33x4	6.50	36x5	9.00
34x4	6.00	37x5	9.00
35x4	7.00	38x5½	12.50

10% extra for Non-Skid. C.O.D. orders shipped same day. 5% off when cash accompanies order. Goods shipped C.O.D. upon receipt of 20% of order.

CAMBRIA TIRE EXCHANGE, Inc.

21-A Cambria Street
BOSTON, MASS.

High Grade Tires and Tubes

5000 MILE SECONDS

at the following prices without a guarantee. However, if you want a GUARANTEE FOR 3,500 MILES, add 20 per cent on these prices.

BEST VALUES ON THE MARKET—A Trial Order Will Convince You

Size	Plain	Tubes	Size	Plain	Tubes	Size	Plain	Tubes
28x3	$7.00	$2.00	32x4	$14.00	$3.35	35x4½	$21.45	$4.20
30x3	7.00	2.00	33x4	14.50	3.50	36x4½	22.00	4.30
30x3½	8.75	2.30	34x4	15.00	3.65	37x4½	22.80	4.60
32x3½	10.50	2.45	35x4	15.85	3.75	35x5	23.10	4.65
34x3½	11.50	2.70	36x4	16.20	3.85	36x5	23.95	4.75
31x4	13.75	3.20	34x4½	20.35	4.15	37x5	24.20	4.95

Add 10% to the above prices for non-skid tires

Order today—$1 deposit required. **Tires shipped by return express subject to examination.** Specify whether Q. D., Clincher or Straight Side Rim.

ARMSTRONG TIRE & VULCANIZING CO.

1336 Michigan Avenue, Chicago, Ill.

BRANCH: 1614 MICHIGAN AVE. **Phones: Cal. 5212; Cal. 2199**

"BUSINESS IS SENSITIVE, MR. DEALER"

It Goes Where It Is Invited and

STAYS WHERE IT IS WELL TREATED.

We Invite Yours.

$50,000 STOCK IN ALL SIZES.

NEW TIRES AND TUBES ALL FRESH STOCK STANDARD MAKES

Slightly Mould Blemished.

Order now and get the first choice at a saving of 50% off the present STANDARD price List.

SERLIN TIRE CO., Inc., **1304 Michigan Ave., Chicago, Ill.**

Phone Calumet 3408

DEALERS—Write for information and trade discounts on

KOR-KER AMERICA'S STANDARD TIRE TREATMENT

Kor-Ker is injected into the tire through the valve. It lies in the bottom of the tube—seals punctures instantly and permanently, **stops slow leaks,** preserves the rubber and increases mileage fully 50%. It is fully guaranteed.

Recommended by leading tire companies and hundreds of big users all over the country, and pronounced beneficial by analytical chemists. Occupies only 6% of air space, leaving 94% air in the tires.

Kor-Ker offers opportunity for big profits on small investment.

We have absolute proof of Kor-Ker efficiency ***Write us today***

KOR-KER SALES COMPANY, Inc.

461 EIGHTH AVENUE NEW YORK

Used Tires, All Standard Makes

We are handling only standard make tires that have been guaranteed for 3500 to 5000 miles. Some of them do not need to be repaired, others do, which we renovate thoroughly and strengthen every weak spot. Satisfaction guaranteed.

Used Tire		Used Tire	
30x3	$3.00	35x4	$7.00
30x3½	4.00	36x4	7.00
32x3½	4.50	34x4½	7.50
31x4	5.00	35x4½	7.50
32x4	5.50	36x4½	7.00
34x3½	6.00	37x4½	8.00
33x4	6.00	35x5	8.00
34x4	6.00	36x5	8.00
		37x5	8.00

10% EXTRA FOR NON-SKIDS

SPECIAL:—4—40 x 4½. Almost New

Goods shipped C. O. D. on receipt of 25% of the order; 5% off when cash accompanies the order.

N. Y. TIRE & SUPPLY COMPANY

220 Columbus Ave., Boston

WOLKEE MOLDED CEMENTLESS TUBE PATCHES

12 TO BOX— GUARANTEED **25c** PER BOX

THE A. F. WOLKE RUBBER CO.

(Incorporated)

LOUISVILLE, KY.

Evansville, Ind.

BARGAINS IN FACTORY SECONDS

28x3	$9.00	34x4	$15.50
32x3½	11.50	35x4	16.00
33x4	14.50	36x4	17.50

Add 10 per cent extra for non-skids.

Public Service Tire and Rubber Co. of N. J.

270 Halsey St., Newark, N. J.
251 E. Jefferson Ave., Detroit, Mich.

PERMA-LOC—FREE

The Original Self-Vulcanizing Patch

You can see its merits in first operation. The quickest, best and least expensive repair for inner tubes made.

DEALERS, JOBBERS, GARAGEMEN

Its ready sale, built on quality, should prompt you to investigate. For free sample, write

PERMA-LOC SALES CO.

Department H Scranton, Pa.

MR. DEALER

Are You Tired Selling Tires at Small Profits?

GOOD STANDARD MAKES

Inner Tubes—Reliners—**We Have Tires** at prices which will make it worth your while to investigate. Write today for our latest bulletin.

Manhattan Tire & Rubber Co.

2208 Michigan Ave., Chicago, Ill.

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X-L TIRES

"Excellent For Service"

Guaranteed First Tires at a saving of 40 to 60%

Strictly Fresh New Firsts

DEALERS PRICES

	List Price		Your Wholesale Price	
	Tires	Tubes	Tires	Tubes
30x3.....	$14.10	$3.05	$ 7.75	$1.68
30x3½....	18.25	3.75	10.04	2 06
32x3½....	21.40	3.85	11.77	2.12
31x4.....	28.00	4.75	15.40	2.61
32x4.....	28.60	4.85	15.73	2.67
33x4.....	29.85	5.00	16.41	2.75
34x4.....	30 65	5.15	16.86	2.83
35x4½....	43.10	6.45	23.00	3.55

These tires are built to give entire satisfaction. We give you a 3500 mile List Price Adjustment Guarantee.

All orders must be accompanied by a deposit of at least 10% to insure immediate shipment. Balance C.O.D., subject to examination on request.

We allow 2% if your check, bank draft or money order accompanies order.

We will refund your money if the tires are not satisfactory and are returned to us unused within 5 days.

DEALERS—GET BUSY—NOW

THIS IS YOUR OPPORTUNITY

EXCEL RUBBER COMPANY

WADSWORTH OHIO

SCORED CYLINDERS

Air and Sand Holes

Repaired by the Originators of the "NICKEL-STEEL ALLOY" ELECTRICAL & CHEMICAL PROCESS (Patent Pending)

THE SUPREMACY of our METHOD is shown by the Fact that we have repaired more than 1300 Cylinder Blocks for One of the Largest Manufacturers.

Improvement over all old methods. Tested by Armour Institute and withstood several hundred degrees more heat than your motor will ever attain.

NO BORING WARPING GRINDING CHANGING OF PISTONS OR RINGS

Work Guaranteed for the Life of the Motor

24-HOUR SERVICE

Save 75% GET OUR FREE ILLUSTRATED BOOKLET

E. BORMAN CORPORATION, 1612 Michigan Ave., Chicago, Ill.

Phones: Calumet 6207-2199 Branch: 453 Michigan Avenue, Detroit, Mich.

World's Largest Cylinder Repairing Company. Over Sixteen Thousand Satisfied Customers.

Scored Cylinders

(Porous and sand hole)

REPAIRED

With Silver-Nickel Alloy

Fused Electrically by the "Lawrence Patent Process"
BEWARE OF IMITATION WORK
No Warping or Enlarging of Bore
Same Pistons and Rings Used—All Work Guaranteed for Life of Car
Reshipped 24 hours after received. Tested and approved by most motor manufacturers. Write for Pamphlet

L. LAWRENCE & CO.
(Est. 1862)
PLANTS AT

Detroit, Mich.....1244 E. Jefferson
Chicago, Ill.....1520 Michigan Ave.
New York.....546 W. 45th St.
Cincinnati, O.....410 Richmond St.
Newark, N. J.....290 Halsey St.
Cleveland, O.....1810 Prospect Ave.

Cylinders Reground

Over 500 Piston Patterns

Always in Stock.

Our Expert Mechanics and our Highest Grade Equipment are your guarantee for highest class workmanship.

Our Special Light Alloy Pistons Will Give You More Power—More Speed.

Auto Engine Works

ST. PAUL, MINN.

BARGAINS IN NEW TIRES

Standard Makes Guaranteed 3500 Miles.

30x3....	$ 7.75	31x4....	$14.75	34x3½..	$13.25	35x4....	$19.50
30x3½..	10.75	32x3½..	11.75	34x4....	17.50	36x4....	19.75
31x3½..	10.75	32x4....	14.75	35x4½..	23.75	36x4½..	24.50
	33x4....	15.25		37x4½..	26.00		

Satisfaction guaranteed or money refunded.
We sell parts for most make automobiles.
Bosch magnetos D4, $15; DU4, $17.50; D6, $17.50.

INDIANAPOLIS AUTO PARTS CO.
720 S. Meridian St. Indianapolis, Ind.

Cylinder Grinding

on special highest grade cylinder grinding machinery. No makeshift tools. Work handled by men with automobile factory experience. Large assortment of patterns for iron pistons. Complete stock of piston rings. Prompt service. Highest grade work only, fully guaranteed.

Aluminite Pistons

Aluminite pistons will put six cylinder smoothness into a four cylinder motor; improve a six or eight, give more power and quicker getaway. For prices, state make, model and year. EXPERT MOTOR BUILDING. Piston pins, aluminite connecting rods and racing motors.

Special discount to the trade.

GREEN ENGINEERING CO.
DAYTON OHIO

Pittsburgh Repr., James T. Shelton, 24th & Sidney Sts.

Crankshafts Reground

on special Crankshaft Grinder—not filed and lapped but REGROUND.

Stafford Motor Co.
2201-2209 Campbell Avenue, Kansas City, Mo.

Honest, Intelligent Service

CYLINDER REGRINDING

PISTONS
RINGS
PINS

No advance in our prices
Get our NEW price list

BUTLER MFG. CO.
Est. 1897

1115 E. Georgia Indianapolis

P. BRADY & SON CO.

Trucking and Storage. Automobiles and Bodies Stored. Automobiles boxed for Export.

552-558 West 58th St., NEW YORK
Telephone, 3440 Columbus.

Cylinder Grinding

PISTONS and RINGS

Largest Because Best

Send for Price List

HOUPERT MACHINE CO.

353 West 52nd St. New York, N. Y.

JAMES RILEY & SONS

Est. 1870

Storage of Automobiles and Bodies exclusively. 40,000 sq. feet.

282-290 East 135th Street, Bronx, New York, N. Y. Tel. 3894-3612 Melrose

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If We Regrind Your Cylinders

Fit Pistons and furnish our "Oil-Tight" Piston Rings, YOU WILL HAVE:

More { Power / Speed } Less { Noise, Oil, Carbon / Gasoline Trouble }

Geo. H. Blettner Co.
401-05 Jackson Blvd., Chicago, Ill. Phone Mon. 2076

PHONE CAL. 6593

Trindl Machine Works

Cylinder Grinding

PISTONS—RINGS—WRIST PINS

61 East 24th STREET CHICAGO, ILL.

ALL KINDS OF MACHINERY

is worth today good money. What have you to sell?

Motor World Classified Column reaches the buyer. Try it for Results.

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MACHINERY
Modern Tools.

GEAR CUTTERS

15-in. Gleason automatic gear cutter. Bevel.
30 x 7-in. Gould & Eberhardt automatic spur gear cutter.

SHAPERS

Two 16-in. Milwaukee, BRAND NEW, back-geared.
One 20-in. Milwaukee, BRAND NEW, back-geared.
Two 25-in. Milwaukee, BRAND NEW, back-geared.

LATHES

9 x 4 Seneca Falls, with chuck, complete.
10 x 4 Seneca Falls, pan bed and chuck, complete.
11 x 5 Seneca Falls, BRAND NEW, with chuck, complete.
11 x 5 Seneca Falls, with chuck, complete.
12 x 5 Davis, semi-quick-change, complete.
12 x 5 Young, with chuck, complete.

OUR MOTTO
Lowest Prices

14 x 6 Fitchburg, semi-quick-change, with chuck, complete.
14 x 6 Lodge & Shipley, geared head, single pulley drive, complete with taper attach., quick-change gears and chuck.

RADIAL DRILLS

One 4-ft. Plain Brand New Mueller Gear Box Drive, Heavy Duty.

MILLERS

No. 1½ American BRAND NEW miller.
Three No. 3 Kempsmith Universal Brand New, complete.
One No. 3 Hendey Universal Brand New, complete.
Three No. 3 H. LeBlond Universal Brand New, complete.
One No. 2 Cincinnati Universal, used.
4½ x 12 PRATT & WHITNEY THREAD MILLER.

MACHINERY
Honest Business

TURRET LATHES

Two 2 x 24 J. & L. geared sliding head, single pulley drive, bar and chuck equipment.
One 2 x 24 J. & L. geared sliding head, single pulley drive, chuck equipment.

AUTOMATICS

Two No. 53 National Acme, single pulley drive.
Two No. 53 National Acme, single pulley drive.
One No. 55 National Acme, single pulley drive.
Two No. 2 Brown & Sharpe automatics.

GRINDERS

No. 1 Wilmarth & Mormon Universal, BRAND NEW.
Three No. 190 Wells BRAND NEW cutter and reamer grinders.
Two No. 3 Modern Universal, BRAND NEW.

We own and can make delivery immediately from our New York Warehouse of the above list of machines
Send us list of your surplus used machinery. Send for Catalogue

MODERN MACHINERY EXCHANGE 52-54 Walker Street, New York City

ESTABLISHED 1876 **WAREHOUSE & SIDINGS: 942 BEACH ST.**

FRANK TOOMEY, Inc.

Iron and Wood Working Machinery, Steam
and Electrical Equipment and Supplies

Large Stock of New and Second-Hand Garage Equipment

MAIN OFFICE 127-131 N. THIRD ST. **PHILADELPHIA, PENNA.**

ELECTRIC MOTORS—AIR COMPRESSORS AND TANKS—NEW AND USED

MOTORS—SINGLE-PHASE, 60-CYCLE, 110-220-VOLT

No	H.P.	Make	Type		R.p.m.
2	1	Wagner	BA	Used	1200
1	1	Westg.	AR	New	1750
1	1½	Kimble	Var.Sp.	Used	100-2000
1	2	Westg.	AR	Used	1800
1	2	Wagner	BA	Used	1800
1	3	Century	REP	New	1800
1	3	Westg.	AR	Used	1740
1	3	Westg.	AR	Used	1200
1	5	Wagner	BA	Used	1750

MOTORS—2-PHASE, 60-CYCLE, 220-440 VOLTS

1	1	Westg.	CSA	New	1800
2	2	G.E.	K	Used	1200

MOTORS—3-PHASE, 60-CYCLE, 220-440 VOLTS

6	1	Allis-Ch.	AN	New	1800
1	1	G.E.	K	Used	600-1800
3	2	Westg.	CSA	New	1800
1	2	Westg.	CS	New	900
4	3	Westg.	CS	New	1800
1	3	Westg.	CS	New	900
6	3	Allis-Ch.	AN	New	1800
4	5	Westg.	CS	New	1200
2	5	Howell	SC	New	1200
2	7½	Westg.	CS	New	1800
3	7½	W.E.	KT	New	1200
5	7½	Westg.	CS	New	1800
2	10	Howell	SC	New	1200
1	10	Allis-Ch.	AN	New	720
1	15	Allis-Ch.	AN	New	600
1	15	G.E.	K	Used	1800
2	15	Allis-Ch.	ANY	New	900
1	20	Westg.	CS	New	1200
2	20	W.E.	KT	New	900
3	20	W.E.	KT	New	1200

MOTORS—DIRECT CURRENT—220-VOLT

1	⅛	C.W.	SH	Used	720
1	2	G.E., G.E. grinder		Used	1650
1	2	Richmond	SH	Used	1600
1	3½	G.E.	CE	Used	800
1	5	G.E.	SH	Used	1650
1	7½	Richmond	RE	Used	1500
1	7½	Eddy	SH	Used	1000
1	10	Westg.	M	Used	1250
1	12	Weston	Elev.	Used	700
1	15	C.W.	CM	Used	800
1	15	C.W.	SH	Used	725
1	20	Ft. Wayne	B	Used	820
1	25	Westg.	Sec. hoist	Used	750

AIR COMPRESSORS
New—Belted Types

No.	Size	Class	Capacity, Cu. Ft.	Pressure, Lbs.
4	6x6	A-E	35 to 59	125
2	7x6	A-E	54 to 80	100
1	8x6	A-E	60 to 105	70
7	8x8	A-E	79 to 116	125

WRITE US WHAT YOU MAY REQUIRE

STANDARD ELECTRIC & ELEV. CO. 126 S. Calvert St., Baltimore, Md.

Wanted—Machinery

Any garage, machine or repair shop with machinery on hand that is out of service for one reason or another will find a ready market and secure good prices through Motor World's Classified Column.

Tell us what you have.

Classified Dept., Motor World

Second Hand—Electric Motors

We make a specialty of, and have the largest stock of SECOND HAND electric MOTORS and GENERATORS in America, and buy and sell, rent, exchange and repair electrical machinery of all kinds.

GREGORY ELECTRIC COMPANY
16th and Lincoln Streets CHICAGO

Do You Want a Good Lathe

or any other kind of used machinery? Tell us about your machinery wants. We'll find the man who has just what you need. Address Service Classified Department, Motor World.

Mr. G-A-R-A-G-E Man

Has it ever occurred to you that you can save both money and time in efficient Garage Equipment, such as we offer. You no doubt do a great deal of Ford repairing and a lot of your time is being wasted by using inferior devices.

We manufacture the most essential devices for well equipped shops. We have patented products that will greatly aid you in your work and which cannot be obtained elsewhere.

We shall gladly send you descriptive circulars and reading matter, so that you may see for yourself. Write today, we put you under no obligations, and let us show you how to effect a saving of time and money.

GARAGE EQUIPMENT COMPANY, 241 4th Ave. S., Minneapolis, Minn.

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Dealers — Dealers — Everywhere

Right now, with the winter months coming, there is a mighty good opportunity for you to materially increase your profits by the sale of

SIMPLE SYSTEM *Three Coat Work* AUTOMOBILE PAINTING

You know, perhaps, hundreds of moderately circumstanced automobile owners who, if the thing were suggested, would jump at the chance to refinish their machines to look like new, and especially when by the **Simple System** they can accomplish it all themselves.

ANYBODY CAN PAINT A CAR IN 3 DAYS

and completely obliterate the marks of the summer's usage with a hard, wearing, beautiful surface on all parts

The three coats put up in sets comprising:

1 can Auto Preservative Undercoat for First coat.
1 can Auto Preservative Color Coat for Second coat.
1 can Auto Preservative Varnish for Third coat.
1 Brush for First and Second coats.
1 Varnish Brush for Finishing coat.
2 Sheets No. 1 Sandpaper for Cleaning car.
1 Sheet No. 0 Sandpaper for sanding lightly after first coat is applied.

All ready for the brush and easily applied in Black and 12 colors, which covers old paint perfectly.

Sold in sets or separately, so that any one or all of the three coats may be had as needed.

Fifty years of experience in manufacturing coach colors for the vehicle and automobile trade have enabled us to produce these absolutely reliable products and to guarantee their quality.

Manufactured only by

F. O. PIERCE COMPANY, New York City

Pierce's Auto Preservative Black Enamel, for fenders and all metal parts where only one coat is needed. It dries hard over night.

WRITE FOR "SIMPLE SYSTEM" BOOKLET AND PRICE

You Can Sell Every Car Owner

PANVAR

Which Will Promptly Restore

A CAR

To Its Shipping Date Appearance

Panvar Is the Only Dependable

REFINISHING VARNISH

which any novice can apply with a Brush, Sprayer or Cheesecloth.

DRIES HARD OVER NIGHT

Is not a polishing oil. Prevents checking, crazing and peeling.

ONE QUART WILL DO AN ORDINARY CAR ONE COAT

$3.00 and 3 Hours Time Will Do a $50.00 Job

SOLD THROUGH JOBBING TRADE ONLY.

Send us your order if your jobber does not carry Panvar.

PACKED 12 QTS. IN A CASE, RETAILS $1.50 PER QT.

OR 6 GALS. IN A CASE, RETAILS $5.00 A GAL.

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Manufacturers

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Contains No Glycerine
Contains No Rust Producing Chemicals

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Franklin 1182

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MOTOR WORLD

Office and Salesroom Dept.

239 W. 39th St. New York

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Classified Advertising Department

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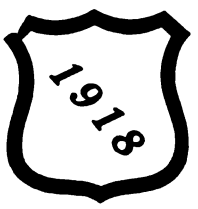
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J. H. FAW, Inc.
Specialists in Automobile Accessories
41 Warren St., New York
Branch: Atlanta, Ga.

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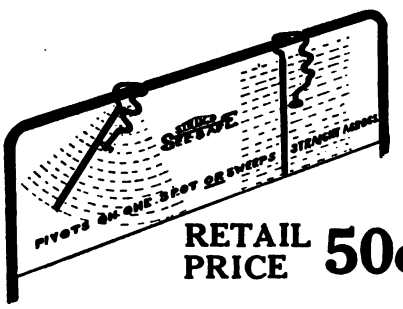
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50c Wind Shield Wiper

A New One



RETAIL PRICE 50c

Dealers:—For Sale by Leading Jobbers in the following locations. If your jobber cannot supply it yet, write us direct and give us his name.

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Hartford, Conn.
Worcester, Mass.
Baltimore, Md.
Washington, D. C.
Richmond, Va.
York, Pa.
Pittsburgh, Pa.
Chicago, Ill.
Peoria, Ill.
Kankakee, Ill.
Milwaukee, Wis.
La Fayette, Ind.
Cincinnati, O.
St. Louis, Mo.
Joplin, Mo.
Kansas City, Mo.
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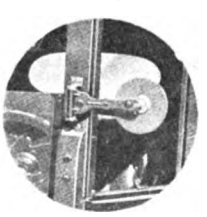
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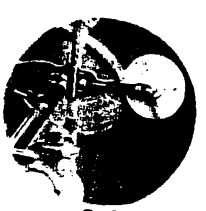
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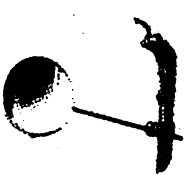
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Order of your jobber. Illustrated catalog of complete line sent on request.

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Style A
For Roadsters and Small Cars



Style E
For Trucks

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I know of one Chalmers dealer who will make a handsome fortune this year, and dozens of others who can comfortably retire on this year's earnings. The Chalmers policy requires that a dealer make money.

Vice-President
CHALMERS MOTOR COMPANY

If interested in a chance to make more money, simply write us.

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Detroit, Mich. U.S.A.

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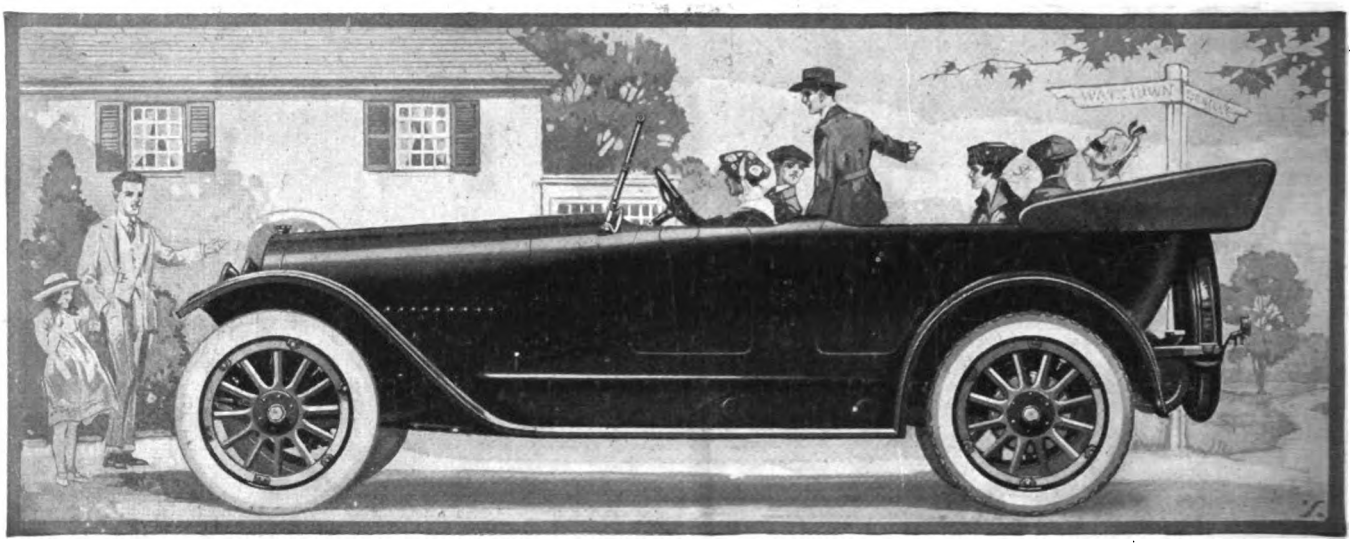
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New-Style Bodies

Exclusive to Mitchell Cars

One attraction in the Mitchell is our matchless body styles.

We now occupy our model new body plant. All Mitchell bodies, open and enclosed, are built here. And each is a Mitchell creation.

Building our own bodies under efficiency methods saves us a large sum per car. All that saving is spent on extra luxury and beauty. Since we occupied this plant, we have added 25 per cent to the cost of finish, upholstery and trimming—all out of factory savings.

Then our body designs are exclusive. Our own artists design them. And they go to extremes to make each type the model of its kind.

Before making our latest designs, for instance, they examined 257 show models. So no desired attraction is missing in Mitchell cars.

These cars excel in luxury and beauty, for the reasons we have stated.

They excel in comfort, because they have the Bate shock-absorbing springs.

They excel in completeness, having 31 features which nearly all cars omit.

They excel in endurance, because they are built to the standard of 100 per cent over-strength.

They excel in value—at least 20 per cent. Despite all these extras, Mitchell prices are below other like-class cars. That is due to John W. Bate's efficiency methods, now applied throughout this mammoth plant.

If you are interested in a fine car—as a buyer or dealer—learn more about the Mitchells.

MITCHELL MOTORS COMPANY, Inc., Racine, Wis., U. S. A.

$1525

Mitchell – a roomy 7-passenger Six, with 127-inch wheelbase and a highly developed 48-horsepower motor.

Three-Passenger Roadster, $1490
Club Roadster, $1560
Sedan, $2275 — Cabriolet, $1960
Coupe, $2135 — Club Sedan, $2185

Also Town Car and Limousine.

TWO SIZES

Mitchell

SIXES

$1250

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Sedan, $1950 — Coupe, $1850

All Prices f. o. b. Racine.

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MOTOR WORLD
for
DEALERS, JOBBERS AND GARAGEMEN

Volume LIII
No. 3

New York, October 17, 1917

Ten cents a copy
Two dollars a year

Miller GEARED-TO-THE-ROAD Tires



More Miller Tires Sold in Akron

Than Any Other Make!

Why It Is and What It Proves

Actual statistics prove that today there are more Miller tires being sold at retail in Akron than any other brand. And in Akron 70 per cent of all the tires of the country are made.

Here not only is Miller tire quality proved, but here also does the Miller Company test out the selling and merchandising plans it gives to its dealers. Here it finds the weapons for winning trade or fighting competition.

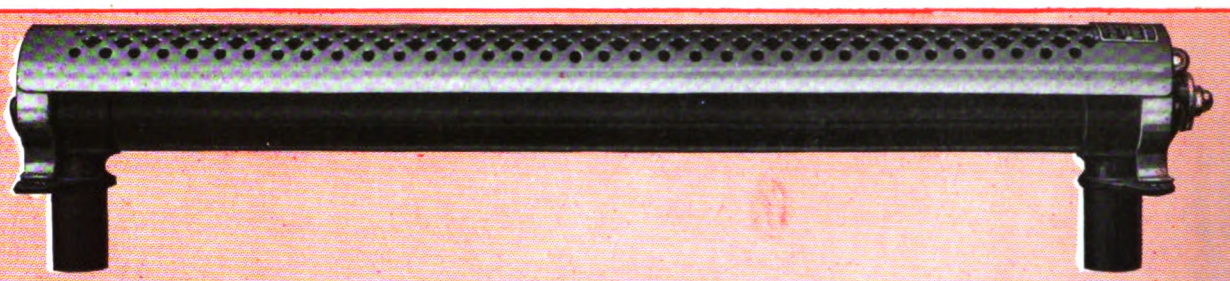
The success Miller has had right here in the home of tires proves not only Miller quality, but also the value of the selling plans we have evolved.

We are now ready to give to all Miller dealers this selling and trade-winning service as well as the high-powered advertising idea that has made Miller tires the selling leader in Akron.

Write today and learn how Miller has achieved this leadership. What it has done in Akron *you* can do in your city with this exclusive agency.

The Miller Rubber Company, Akron, Ohio

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Why Especially The UTILITY Protected Foot Rail HEATER ?

Because:

—the UTILITY Protected Foot Rail Heater really heats the car.
—UTILITY Jr. Protected Heater does the same for Fords, at half the price.
—UTILITY Front Seat Heater serves as well for Maxwells' Chevrolets, and Fords, and for *front seat installation* on all other cars. *It keeps the driver warm.*

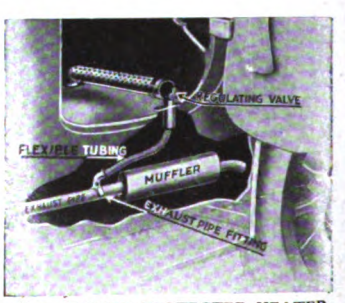
—serves as an ornamental foot rail all summer when artificial heat is out of season, as it does all winter while it heats the car. *Not an extra* accessory.

—*gets hot enough to burn*—as any heater must, that really heats the car—*but cannot* harm robes, clothing or any part of the car, because *all* UTILITY Heaters are *protected* with a heavy shield.



—odorless, noiseless, fool-proof. Requires no special fittings. Just *one regular model* to handle, the "Junior" for Fords and Front Seat Heater for Maxwells, Chevrolets, Fords, and Front Seat Installation in all other cars.
—*a year-round seller that sells.*

Write for unusually attractive illustrated literature to send your own UTILITY prospects. *Ask for discounts that pay.*



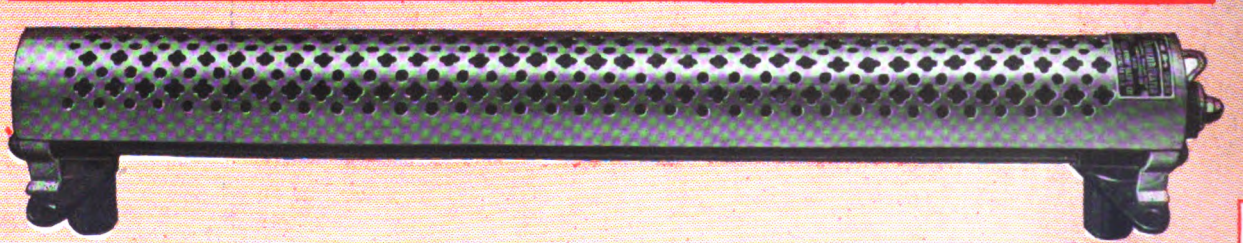
How UTILITY PROTECTED HEATER Is Attached to the Exhaust

Price $15

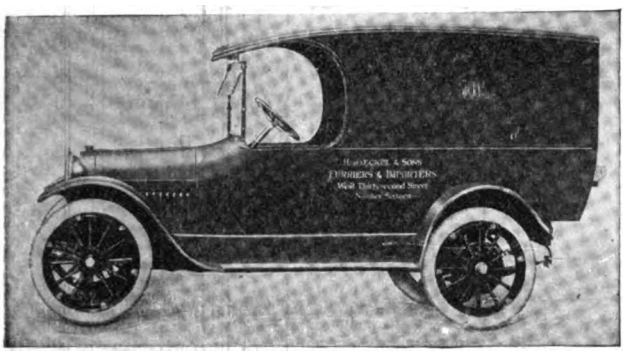
UTILITY Jr. Protected Heater for Fords **$7.50**
UTILITY Front Seat Heater, for Maxwells, Chevrolets, Fords and Front Seat Installation in all other cars **$10**
Prices west of Rockies:
UTILITY Protected Heater.. **$16.00**
UTILITY Front Seat Heater. **10.75**
UTILITY Jr. Heater..... **8.00**

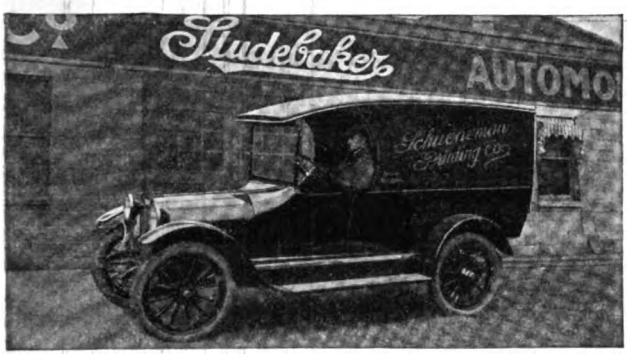
Keep the Driver Warm

The Hill Pump Valve Company
Archer Ave. & Canal St., Chicago
Eastern Sales Office — 149 Church St., New York City

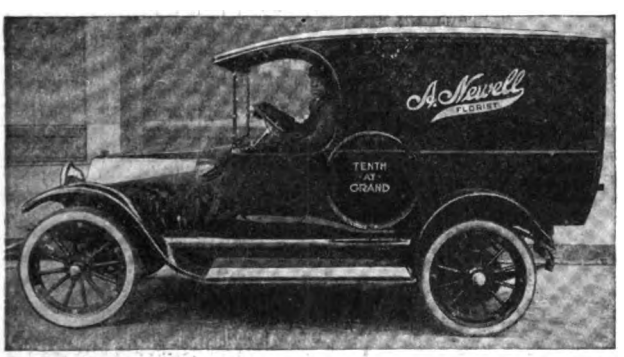


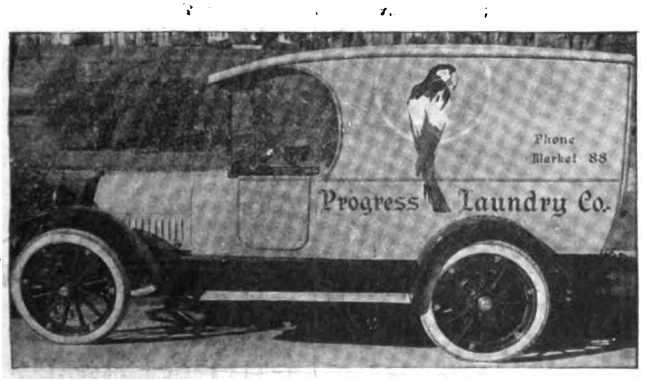
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PRESTIGE
For These Businesses
PROFIT
For Studebaker Dealers

STUDY these photographs which show Studebaker Half-Ton Panel Delivery Cars in use in six different lines of business;—only a few of the many businesses using this one type of Studebaker Commercial Car, alone.

In fact, it is difficult to think of any kind of retail or wholesale business which could not add prestige to its reputation and make savings in its delivery costs by using one of these handsomely appointed, serviceable and dependable Studebaker cars.

Think of the advertising value to the firms which use them. Then think again of the profit to be made in selling these cars to the countless businesses which need them.

This Half-Ton Panel Delivery Car at $985 is but one of six Studebaker Commercial Cars ideally adapted to fifty-one different businesses.

There is, also, a Half-Ton Express at $960, a Half-Ton Station Wagon at $985, a One-Ton Express at $1400, a One-Ton Stake Body at $1450 and a 16-Passenger Bus at $1600. All prices f.o.b. Detroit.

Write for detailed information.

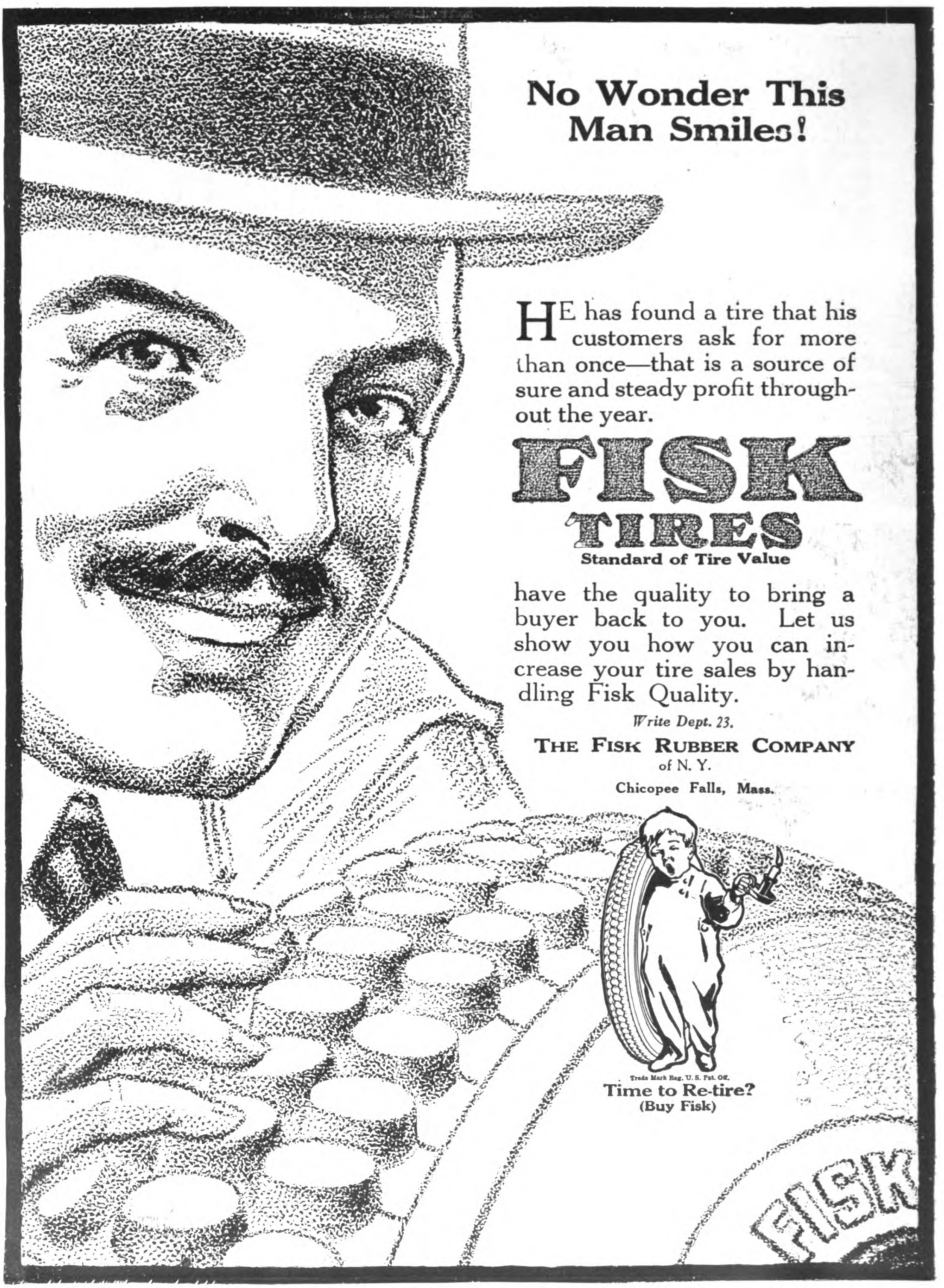
Studebaker

Detroit, Mich. South Bend, Ind. Walkerville, Ont.

Address all correspondence to South Bend



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MOTOR WORLD
for
DEALERS, JOBBERS AND GARAGEMEN

PUBLISHED EVERY WEDNESDAY BY

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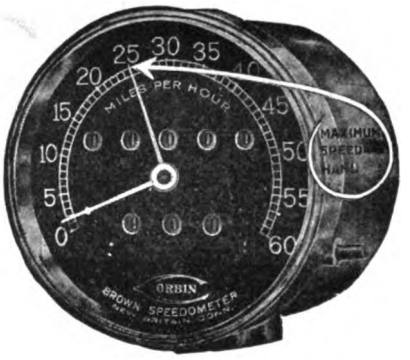
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An Essential Part of Your Machine's Equipment—the

CORBIN-BROWN SPEEDOMETER

The functions of a speedometer are to show you just how fast you are going and how far you have gone.

If it does these things and does them accurately it is a valuable investment; if not, it is worthless.

But speedometers have many influences to contend with—heat, cold, altitudes and electrical disturbances and equipment.

By many speedometers this contest is not waged successfully.

This is not the case with the Corbin-Brown Speedometer. It is totally immune to the inaccuracies caused by the above mentioned influences. This is due to its centrifugal principle, which science has conclusively proved to be correct.

At all times and under all conditions the record of this instrument is correct. Therefore the wisest and most satisfactory thing to do is to equip your machine with it.

Investigate it today
Catalog on request

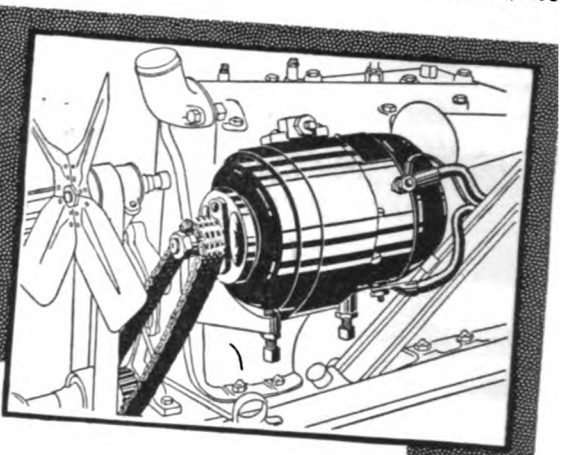
The Corbin Screw Corporation
THE AMERICAN HARDWARE CORPORATION, Successor
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Genemotor

It Starts Your Ford— and Lights it too



GENERAL ELECTRIC COMPANY'S STARTING AND LIGHTING SYSTEM FOR FORD CARS

CABLE ADDRESS PICARDO. NEW YORK WESTERN UNION CODE

A. J. PICARD & CO. Inc.

EXPORTERS. IMPORTERS. JOBBERS.
MOTOR CAR ACCESSORIES
61ST STREET AT BROADWAY,
NEW YORK.

OFFICE OF THE PRESIDENT

To Live Jobbers and Dealers

I want to put money in the pockets of some more jobbers and dealers.

Day after day I am getting rush letters and telegrams demanding additional **Genemotors.**

As the General Distributor I am in a fine position to see just what is doing in every section of the country and I give my word for it that GENEMOTOR is one of the best paying propositions that jobbers and dealers have ever handled.

GENEMOTOR is acknowledged to be the best built starting and lighting system for Ford Cars.

The General Electric Company backs up every **GENEMOTOR.** Simple, compact, powerful, fool-proof, easily installed—that's the **GENEMOTOR** story in a few words.

Won't you write me personally for some facts and figures about **GENEMOTOR** and why you should take advantage of this opportunity?

Price $85.00
f.o.b. Lynn, Mass.
Built by the
General Electric Co.
U S L Battery
Standard Equipment

A. J. Picard
President.

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MOTOR WORLD
for
DEALERS, JOBBERS AND GARAGEMEN

Vol. LIII New York, U. S. A., Wednesday, October 17, 1917 No. 3

For the Busy Executive

TIME is money. The saying is trite and worn threadbare; but it's true, nevertheless. The editors of Motor World urge that you read every article in this issue. Every one is worth the time to read it. If you want to refer any special article to a particular department head or other employee, you will find the following brief index-digest of value:

PUT a check in the square opposite the article to which you wish to direct attention. Write the man's name for whom the article is intended on a slip of paper. Pin the slip to this copy of the paper. Have the office boy deliver it.

Page

☐ **Winter Business Department**.....12-13
Are you going to let this Winter go by without making an attempt to get Winter Business? Not if you read this department regularly, every week.

☐ **Keeping an Inventory**.....14-16
Motor World has designed a special card to make this work easy and assist in keeping accurate records.

☐ **System in Organization**.....8-10
Do you believe that an organization can be built up and cemented together with a good system? Read about this one.

☐ **Explaining the Tax**..... 11
The Treasury Department has made a number of preliminary rulings which will help every dealer in collecting the war tax.

☐ **Boston's Enclosed Car Week**.....35-38
It sold a lot of cars, drew a lot of people and will be repeated next year—but with some changes. What are they?

☐ **Better Mechanics**.....24-25
What is a Cadmium reading? And can you properly adjust headlamps so they won't glare? These articles answer both questions.

Page

☐ **Winter Business Windows**..... 22
Here are two that have been arranged by New York dealers and that can be copied by any other dealer.

☐ **Give Yourself a Jolt**..... 28
It's an editorial, and a corker. We believe you don't realize just what this war means to you; this editorial will help you to a realization.

☐ **The New Army Truck**..... 41
Two of them have been finished and are on their way to Washington. The whole story of the truck is told, weights and all.

☐ **Answering Your Questions**..... 26
Many men ask many questions, and this page is among the most interesting in this issue. We'll answer yours, too.

☐ **Used Car Profits**..... 6-7
Here's a man who turns in profits of $1,000 a month on used cars and he has some very novel selling ideas.

☐ **Placing the Blame**..... 17
This is the Reilly story and the plot is too good for us to spoil by telling anything about it here. Read the story and judge for yourself.

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Used Car Profits 1,000 a Month

"A DOLLAR to-day is better than ten dollars to-morrow, in business," says Samuel Simon. "Turnover is one of the secrets of success in any business," he explains. There are two kinds of used cars—those that need rebuilding and those that are not worth it. Both kinds must be moved quickly.

Why does Simon say it might be worth while to hire a first-class solicitor to make a house-to-house canvass for used-car prospects?—EDITOR.

By B. S. Brown

DURING January, February, March and April of 1917—the worst four months of the year—the net profits of the used-car department of the Overland company at Kansas City, averaged nearly $1,000 a month. The net profits in the previous months, and in the months following, were naturally much larger, and have been increasing steadily. "Net" profits here mean the money that was left after charging off the appraised value of the cars taken in exchange on new cars; all expenses on the used cars, preparing them for sale, rent, commissions of salesmen, salaries, proportion of overhead—everything.

How was it done? Samuel Simon, manager of the department, knows—there was no guesswork about it. Between Sept. 1, 1916, and Aug. 1, 1917, Simon appraised 300 cars; of these, 280 were taken in and 248 were sold. There were remaining on hand Aug. 1 32 cars. Six of these were the subjects of rather excessive allowances, given for diplomatic and advertising reasons, and they had been in the department more than two months. Twenty-six had been there less than two months, many, of course, being still in the shop.

Furthermore, 10 per cent of the buyers of used cars from this department in the past 11 months have already bought new Overlands; 30 per cent of the used-car buyers are now live prospects for new cars.

"No man ever makes a success by breaking even, and the manager of a used-car department isn't successful unless he turns in a net profit on the department," says Simon. "I never take a car in with the idea of breaking even on it, and therefore I have come out ahead.

Two Classes of Used Cars

"Used cars are of two classes: those that are not worth rebuilding, and must be moved at once, taking a small profit, either as junk or to a buyer who knows what they are; and the cars that can be put in first-class condition and sold at a good profit. Every used car sold here has brought at least its appraised price plus the cost of putting it into condition, and a small profit; some have brought a considerable profit.

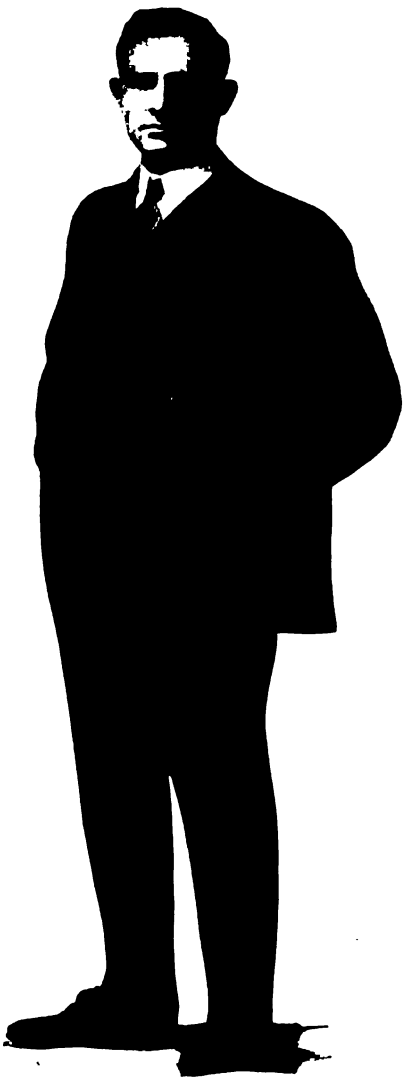
"Turnover!

"That's one of the secrets of success in any business. If a junk car doesn't sell in 30 days *it ought to be broken up.* If a good used car doesn't sell in 90 days at a good profit the profit must be cut to move it.

"A dollar to-day is better than ten dollars to-morrow, in business."

Simon's policy has been to get the best work possible done on a car that is to sell as a rebuilt car. All the work, except the top work and the painting, is done in the Overland shop, and the painting and top work are under Simon's personal supervision.

"Too many dealers hunt around for the painter who will do the job cheapest," he said. "I hunt for the man who can do it best. *Paint helps the looks of the car so greatly that it is an important factor in the sale."*



Samuel Simon
Manager Used Car Department Kansas City Overland company

While the policy of guaranteeing cars has not prevailed, Simon has frequently guaranteed them—the Willys-Knight for 90 days, the Overlands for 30 to 60 days, but never the cars of other makes.

"Prospects—how do you get them?" Simon was asked.

"The best prospects and the largest number come through customers who have been pleased with purchases of used cars from us," he answered. "Advertising in the leading newspaper is next in value. I have got fine results from moving-picture advertising."

One of the recent methods of getting prospects that has resulted in several sales is the use of piano, coffee and other salesmen of other lines. These salesmen are paid a dollar for the names of possible purchasers of used or new cars; and five dollars if the prospect actually buys. The salesmen are given their money once a month, which gives opportunity to discover whether the tips have been bona-

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fide. Naturally, only salesmen who are fairly well known are paid for the names of prospects.

Frequently a piano salesman visits people who have been considering the purchase of a piano for some time, and they have changed their minds—they now want a motor car. These people are excellent prospects, since they have already made up their minds to the expenditure of several hundred dollars. They frankly explain their new determination to the piano salesman, because they have to make the best excuse possible to let him down easy. Piano salesmen who are under arrangements with a used car, or other dealer, therefore become automobile boosters, and are the more willing to relinquish their quarry instead of arguing against the purchase of a motor car.

Salesmen of coffee and similar household articles get into close touch with the housewives, who tell them many intimate details of their family arrangements. And often what the women don't tell the salesmen in the casual conversation is overheard from them or other members of the family.

So many people seem to want to buy, he said, that he believes it would pay to hire several high-class solicitors, at, say, $25 a week, to make house-to-house canvass of the city in an intensive campaign.

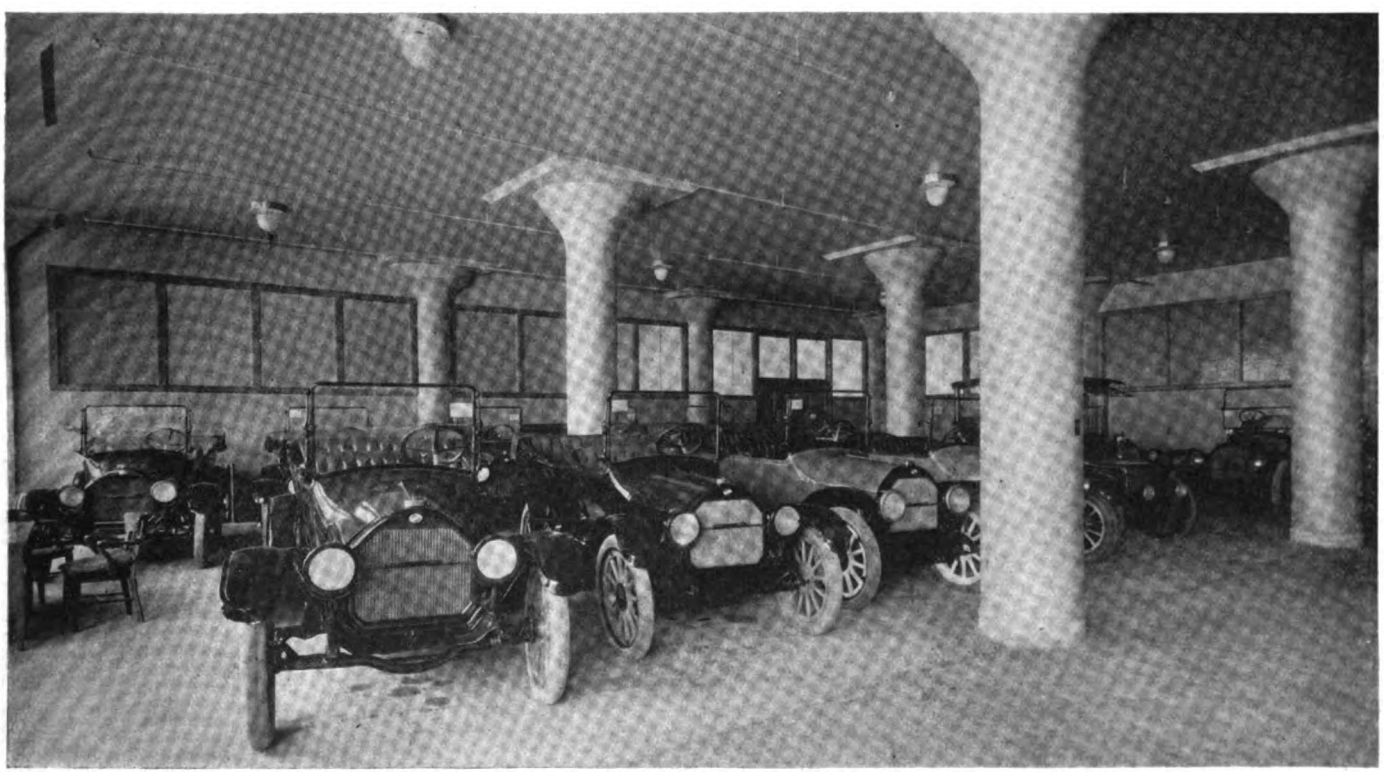
	INFORMATION
NAME OF CAR	Overland 81T - 1915
MILES DRIVEN	6500
OWNED BY	J. W. Jones
ADDRESS	4525 Summit St. K. C. Mo.
PHONE NO.	Bell - Main 4313
PRICE WHEN NEW	$975.00
PRICE NOW	$410.00

The information card giving data on the used car's history, is sometimes a printed form, a tag attached to the steering wheel. More recently it has been the custom to paste or otherwise attach the information card to the glass of the windshield, where it is more conspicuous

A salesroom feature that is serviceable in the Overland department where the dealer has confidence in the quality of his used cars, is the frank announcement of the data connected with the car. The ticket on each car bears the car number, the mileage, the year originally sold, the name of the former owner, the former selling price, and the present selling price.

The prospect for a used car often wonders who had it before. Perhaps he would like to ask that person how the car ran. The card tells him the name, and he can go ask all he wants to. If the former owner relates the shortcomings of the car the dealer has a chance to tell how he has overcome such defects.

A used-car department operated on the plan described produces many prospects for new cars, and this has been the case with the Overland department. Close cooperation on prospects between the new and the used-car departments reduces the number of used-car sales to people who might buy new ones. But this feature is not necessarily a subject of worry. If the prospect really wants a new car, and buys a used one, he will soon be a prospect for a new car.



As the picture shows, the used car department has quite as handsome a room, is fully as well kept, and looks as attractive as any new car department; most of the cars can scarcely be told from new, as they have been repainted if they needed it, the tires usually being the only sign of wear—and often new tires have been added. The most striking difference from a new car salesroom is that many makes are visible

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Here is a group in session on one of the Wednesday night meetings. It looks like a meeting of bloated bondholders—but, in fact, they were just discussing "why rear springs squeak," or some other greasy subject. Or perhaps putting the "sir" in service. Robinson is directly in the center

Holding an Organization Together With System

Every Man Has a Definite Job to Do and Is Individually Responsible for the Job

L. J. ROBINSON, Chalmers distributer, Detroit, is a live dealer. He has made his service station organization a live organization by installing a system that makes each man individually responsible. He is keeping that organization alive by holding weekly shop meetings to discuss the work.

The first step was to divide the men into departments, or groups, each having its particular work to do, and each responsible to only one man. That man, in turn, might be responsible to another higher up, but as far as he is concerned, he is working alone for the man directly over him. That renders shifting of responsibility impossible.

The inspector has but one job to do—to see what work must be done, in certain cases, and to know that every job going out is right. He is directly under no one except the assistant service manager, and is a department by himself.

Likewise, the timekeeper has but one job—to keep the time cards on every job and to know that they are right. There is no possibility for wires crossing, each knows his duty, and does it.

In the mechanical department the men fall naturally into certain groups—engine repairs, axle repair , etc. But due to the proximity with the Chalmers factory, Robinson has been able to hire many former road men. Hence almost any man can do about any job on a Chalmers car. So the division of the workmen is not marked. But each is directly responsible to his working foreman.

SYSTEM, ordinarily, is cold blooded. In this, it buries the individual. Many shop systems have failed because they were merely systems. But system can be made the skeleton that holds a live organization together. A man without a skeleton is little more than a jellyfish. An organization without system is—jelly.

Uses Envelope System

Robinson uses the envelope system in accounting for each job in the shop. This system, in brief, comprises an envelope, carrying on the front side an office record and on the rear a material and invoice record. The former is shown in Fig. 1, the latter in Fig. 6.

In the original form this envelope has the cards shown in Figs. 2 and 3 attached to it. This permits triplicate copies of the data on the outside of the envelope to be made, in the owner's presence. Each sheet and the envelope bear the same serial number of the job.

These three forms are filled out when the owner leaves the car. If the work to be done is not evident, the tester gives the car a trial and determines what must be done before the owner leaves. He then authorizes the work.

All items on these cards should be clear, with the possible exception of the mileage record. This is taken to forestall complaints on the owner's part of unsatisfactory service—owners possessing the habit of thinking 2000 miles is only 200. By checking up the mileage record of the machine when it was taken into the shop, and that when it returns, the elapsed mileage may be determined.

After the cards are made out by the superintendent the envelope is sent to the office (forms 1 and 6); form 2 goes to the service manager, and form 3 is attached to the car by means of a celluloid covered leather carrier. Some part of the work is now assigned to a workman and the work started.

The individual workman's time card, Fig. 3, is used in routing and accounting for each part of the work. The work to be done is checked by the foreman and stamped by the timekeeper at the start of the work. The time clock used is what is known as the Calculograph. This instrument, in addition to

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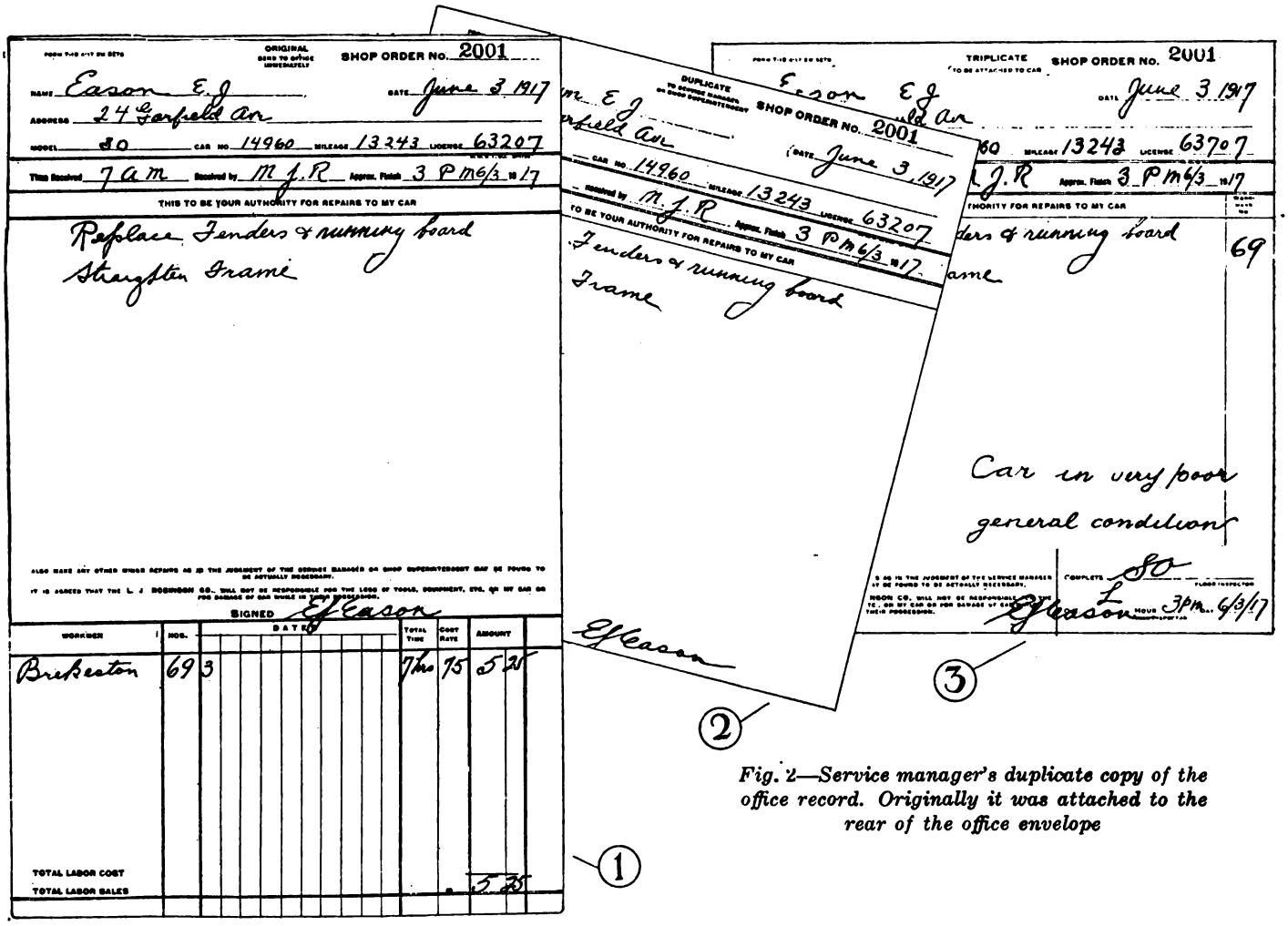


Fig. 1—Front side of the office envelope. This contains the record of the car and the repairshop record, as well as the owner's authority to do the work. Form 6 is on the back of this envelope

Fig. 2—Service manager's duplicate copy of the office record. Originally it was attached to the rear of the office envelope

Fig. 3—Car card, made out with the office envelope and attached to the car until the work is done. It is then checked, and signed by the inspector

recording the month, day, year and time of start and finish, records the elapsed time at the final stamping of the finish of the job.

One of these cards is made out by every workman who does any work on the car. When that part of the work is finished it is sent to the office and placed in the envelope bearing the serial number of the job.

Material requisitions go through the stockroom on the form shown in Fig. 5, and when recorded are sent to the office and placed in the envelope, together with the work cards. Material requisition cards are blue, so that they may be readily sorted from the work cards.

After all the work is completed the car is turned over to the final inspector, who checks up the work and sees that it has been done properly. If not, it is sent back to the man that did the work and made right. If O.K. the car card is sent to the office, indicating that the work is complete. But it must first be signed by the final inspector. If the inspector notes that the car is in poor condition, in parts that were not ordered to be repaired, he makes note of that on the card before sending it to the office. Then the owner may be warned and complaints forestalled.

When the car card comes to the office all previous work cards and stock requisitions have come in, been transferred to the face of the envelope and have been placed in the envelope. To make out the customer's invoice it is only necessary to transfer the labor record and the material record from the faces of the envelope. This invoice also bears the job number, so that the envelope may

MATERIAL REQUISITION No. 15260

TO _____ STOCK DEPT. DATE June 3 1917

SHOP ORDER NO. 2001 ACCOUNT Eason E.J.

QUAN.	PART NO.	ITEM	√	UNIT COST	AMOUNT	ON HAND
1	2K-16	Left Front Fender	✓		7 00	

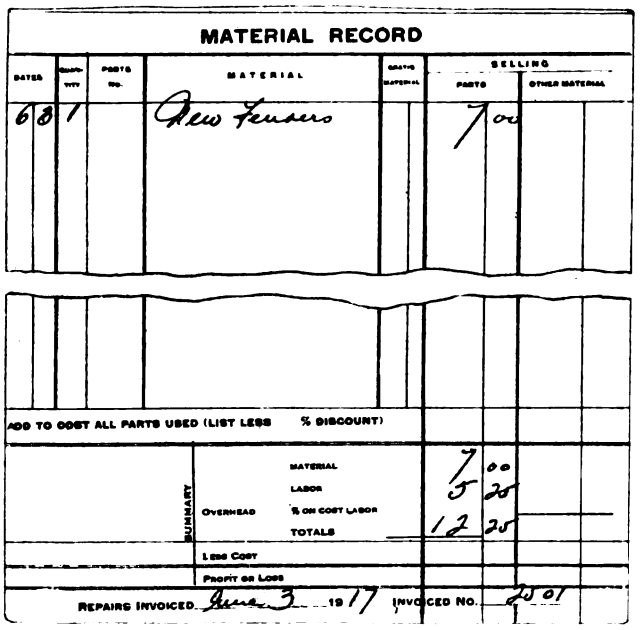
SEPARATE REQUISITIONS MUST BE USED FOR MATERIAL FROM EACH STOCK AND FOR EACH SHOP ORDER OR ACCOUNT

ENTERED COST LEDGER _____ SIGNED Brabeston

ENTERED SUMMARY _____ DELIVERED BY M. J. B

Fig. 5—Material requisition card. This bears the job number, and must be signed by the workman

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MATERIAL RECORD

DATES	Quantity	Parts No.	MATERIAL	Drafting Material	SELLING PARTS	SELLING OTHER MATERIAL
6 8	1		New Fenders		7 00	

ADD TO COST ALL PARTS USED (LIST LESS % DISCOUNT)

SUMMARY			
	MATERIAL	7 00	
	LABOR	5 25	
OVERHEAD	% ON COST LABOR		
	TOTALS	12 25	
	LESS COST		
	PROFIT OR LOSS		

REPAIRS INVOICED June 3 1917 INVOICED NO. 2501

Fig. 6—The back of the office envelope bears the material record and summation of the invoice

be referred to later if desired. All envelopes are filed numerically after the invoice is made for this purpose.

The above includes all the forms used in the system except the stock record card. These show the amount of stock on hand, the amount ordered, the price and location of the part in the bins. The parts number is taken from the parts book.

This completes the system—a system that in itself promotes individual responsibility and is simple and complete. Now let us see how Robinson injects life into the organization.

Every Wednesday night the employees meet together, on common ground, for the purpose of discussing their common work. Robinson believes that a large part of his salesforce is in overalls and in the grease—selling service and selling satisfactory. They are keeping the car sold. And in keeping the car sold, they are making powerful salesmen out of the owners.

So the workmen meet every Wednesday night. Though in the main they discuss shop system, methods of handling the work, engine adjustments or other technical points, they also discuss points ordinarily thought to be of interest only to the salesmen. They are given talks on courtesy and asked to express opinions on parts of the business outside their regular work. In short, they are treated like human beings.

Factory men and engineers are brought to these meetings and give talks on technical points of the car. Parts and accessory men are invited to discuss accessories—lighting and starting systems, batteries and many other points. The men are made to feel that they are important parts of the organization. When on the job they forget the time clock and try to do the best work possible.

Some time ago Detroit was having an electric power famine. It was asked that economy be used in the use of electric lights. One of the workmen conceived the idea of lighting the showroom up with candles, thus conserving the power and creating a timely and novel display.

He went to Robinson, suggested the idea, and it was carried out. As stated, Robinson is a live dealer—which in the main consists in cashing in on ideas—your own or someone else's. But if it had not been that the workman knew that his idea would not be laughed at the idea would never have been expressed.

Again—the common practise now is to buy bales of wiping cloths instead of waste. These cloths come in large sheets—much larger than is ordinarily required for wiping purposes. But no workman would ever take the time to tear out a piece the size needed.

The tool room man saw that this was a leak. So he suggested that a porter cut all the cloths in the bale up into small sizes. This was done. In one month the company decreased its cloth bill by two-thirds.

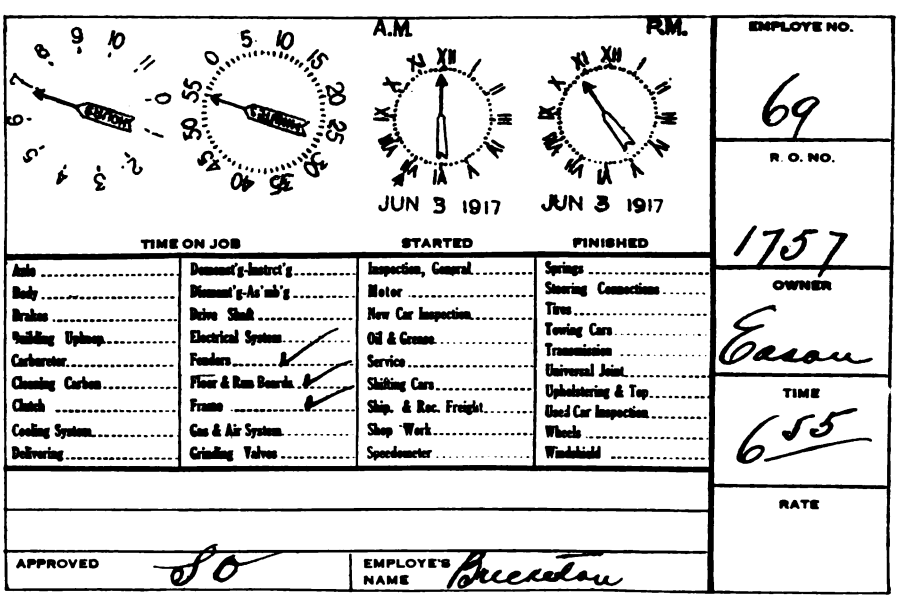
System is essential—but time and patience, spent in the intensive cultivation of the members of an organization, will pay for themselves a thousand times.

Wichita Show Sells Cars

WICHITA, Oct. 15—From the standpoint of business done, the Wichita show, which opened Oct. 1 and closed Oct. 13, was not as successful as had been hoped, though from the standpoint of advertising and publicity it was all that could be desired. It was held in conjunction with the Wichita International Wheat Show and Food Conservation Congress and more than 150,000 persons from all over the Southwest attended. The show was held in one of the Fair Grounds buildings. Retail sales will probably total about 200 cars and in addition a number of dealer contracts were signed. The Jones Motor Car Co. was the only factory directly represented and reports that a total of 217 cars were sold and signed for on agency contracts. Thirty-one dealers had space at the show, which was so arranged that all visitors to the grounds were required to pass through the automobile exhibition. It is probable that next year an exclusive automobile show will be held.

Detroit Celebrates Good Roads Day

DETROIT, Oct. 11—To-day marks the completion of the Northville outer belt drive, a part of the Wayne County concrete system, which, taken with the mileage inside the city limits, presents a continuous paved highway 120 miles long. Intersecting with all radial roads, it brings the remotest corners of the county into close contact with the city. Approximately 500 cars, bearing 2000 motorists, left Cadillac Square to parade over the new 7-mile road. An amalgamated band of 250 pieces, largely from the Ford, Willys-Overland, Reo, Studebaker and Packard plants, accompanied the parade. The good roads in Wayne County are the result of co-operation between the Board of County Road Commissioners, the Chamber of Commerce and the Detroit Automobile Club.



A.M. P.M.

JUN 3 1917 JUN 3 1917

EMPLOYE NO. 69

R. O. NO. 1757

OWNER Eason

TIME 6 55

RATE

TIME ON JOB		STARTED	FINISHED
Auto	Dismant'g-Instruct'g	Inspection, General	Springs
Body	Dismant'g-Ass'mb'g	Motor	Steering Connections
Brakes	Drive Shaft	New Car Inspection	Tires
Building Upkeep	Electrical System	Oil & Grease	Towing Cars
Carburetor	Fenders R	Service	Transmission
Cleaning Carbon	Floor & Run Boards R	Shifting Cars	Universal Joint
Clutch	Frame R	Ship. & Rec. Freight	Upholstering & Top
Cooling System	Gas & Air System	Shop Work	Used Car Inspection
Delivering	Grinding Valves	Speedometer	Wheels
			Windshield

APPROVED SO EMPLOYE'S NAME Breeden

Fig. 4—Workman's time card. It is stamped by the timekeeper and sent to the office after completion of the work

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Explaining the 3% Tax

Treasury Department, in Preliminary Opinions, Clears Up Some Confusion

NEW YORK, Oct. 15—Some of the confusion which has arisen following the passage of the war tax measure which imposes certain taxes on automobiles, motor trucks and commercial vehicles will be dispelled by preliminary rulings which have been obtained by General Manager Reeves of the National Automobile Chamber of Commerce.

By way of letting manufacturers, wholesalers and retailers know the viewpoint of officials of the Internal Revenue Office of the Treasury Department, the National Automobile Chamber of Commerce asked certain questions of a general nature. These have been answered by P. S. Talbert, Chief of the Law Division, and Dr. Gilmer Brenizer of the War Tax Division, and while the opinions given are preliminary and are subject to change, they are a valuable guide. Following are the subjects which were covered by the questions:

1—Insofar as manufacturers are concerned, the law becomes effective October 4; manufacturers who sell cars on and after that date will be taxed 3 per cent on their selling price.

2—Distributers doing only a wholesale business, and distributers who do both a wholesale and retail business will be required to pay a tax of 1½ per cent on all cars held and intended for sale on Oct. 4. The date may be set back to October 3, though this is not probable. The purport of this opinion is that *distributers doing both wholesale and retail business will have to pay the 1½ per cent tax on all cars held for sale regardless of whether they are for wholesale or retail trade.*

3—The tax becomes due when the sale is made and a sale is taken to have been made *when title to the car has changed ownership.* It does not matter where the car may be, that is, whether actually in the hands of the manufacturers or the purchaser or in transit between the two.

4—The actual price obtained for the car by the seller is to be the basis on which the tax is levied, and not the list price unless the car is actually sold for that. In other words, when a car is sold for part cash and part some other consideration, such as a used car, for example, *the tax is levied on the price for which the car was sold and not on the amount of cash involved.*

5—Under existing government laws, purchases made for government use are not taxable. In other words, manufacturers selling cars to the Government will not have to pay a tax on them. Cars sold to foreign governments, however, will be required to pay the tax.

Things to Remember

Law became effective Oct. 4.

Wholesalers must pay tax on all cars held Oct. 4.

Tax is on selling price of car.

A chassis is a motor car.

Branch houses are wholesalers.

Special equipment taxable when billed with the car.

Used Cars probably will be taxed 1½ per cent.

6—The treasury department is inclined to hold that a chassis is an automobile and is therefore taxable as such.

7—Branch houses will be considered as wholesale dealers and as such will be required to pay the 1½ per cent tax on cars held October 4, even though the parent factory holds a majority, or the whole, of the branch corporation stock. This ruling will obtain where the branch house is a distinct and separate corporation from the manufacturer's corporation.

8—Where cars are shipped with special equipment, and billed to the purchaser with such equipment included in the bill, the manufacturer will be required to pay the tax on the full amount. If the car is shipped with its regular equipment, however, and extra equipment or another body is supplied as an extra purchase, *the tax would be paid only on the sale price of the car without the extra equipment.*

9—The Treasury Department does not look with disfavor on the plan of averaging the tax so that the amount of tax paid by the ultimate purchaser of a certain type of car shall be the same irrespective of the sliding sale of discounts allowed various classes of dealers. The department agrees that this probably would be fairer to the retail buyer. In this connection, it is pointed out that the Treasury Department is interested only in the tax which the manufacturer pays on his car sales and not in the form in which he passes it to the ultimate consumer. It is recommended that the dealer place on his bills an amount which will cover the war tax with the notation *"to cover the war tax"* rather than to label it merely *"war tax."*

10—Although the matter is still under consideration, the Treasury Department is inclined to rule that the Revenue Bill as worded makes no exceptions in the case of used cars held by wholesalers on October 4, on which officials think that a tax of 1½ per cent may have to be paid, despite the fact that this is not the intention of the Conference Committee members. *In other words, wholesalers or distributers doing both a wholesale and retail business, may have to pay a tax of 1½ per cent on used cars held on October 4, though retailers apparently will not have to pay this tax.*

11—Where a distributer or dealer is in doubt as to whether a tax should be paid and how much, he should collect the maximum amount from the purchaser and inform him that any amount collected in excess of what the Government requires will be returned. In making returns of taxes, manufacturers, wholesalers, and retailers should list all taxable articles and pay the required tax on them. On articles where there is a reasonable doubt as to whether a tax should be paid, a separate list should be made and with this there should go an explanation giving the reasons why the tax apparently should not be paid. In other words, where there is a doubt, the Government should first be asked as to the proper procedure. This will give the Government all needed information and will obviate the possibility of penalties.

12—Nothing very definite has been decided as to when and how taxes should be made. It has been suggested that the business of each calendar month be reported and it is provided that 30 days are allowed to file reports. It is understood that 15 to 30 days will be allowed to pay the amount due the Government.

All these matters can be adjusted with local collectors of internal revenue.

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Winter Business

It Can Be Done— Start NOW

Read This First

IN order to go after Winter Business you must start somewhere, some time, and keep at it. In last week's Winter Business Number were many letters devoted to keeping your shop busy selling accessories and doing other things. On these pages this week is a specific plan for selling a lot of oil. Work it in connection with the oil service plan in the Winter Business Number. Use the plan on these pages at once because next week we shall show another. We shall give you something every week all winter to keep your cash register jingling—if you USE the plans.

Use the Window

As a starter build a show window of oil. Oil doesn't sound like much of an exhibition product, but look on the next page and see what a fine showing it can make. Trim this window Saturday night or Sunday so it will be all ready for Monday. Let the window stand ONE WEEK and then follow it with another window of other goods, which we shall show.

Run Some Ads

In your advertising use the ad. that is shown on this page. Set it in the size of space shown, or in single column space, or set it two or three times as big. If you use larger space you can use larger type and get more white space and greater display.

If you want to use additional ads. take one of the form letters on the opposite page as copy. Put on some such heading as "Cold weather may chill your motor," or "Does your engine knock?" or "Have you changed your oil?" Any such line will catch the car owner's eye.

Use Form Letters

Send out to your prospect list any one or all three of the letters shown on the opposite page. If you wish you may split the list into three parts and send each part one letter. Or, you can send two of them out during the ten days preceding the week you have your window display.

Make Some Money

You can make a lot of money this winter if you adopt aggressive methods. Many dealers and garagemen made money last winter by going after business. They used plans from MOTOR WORLD and plans of their own. The important point is that they used plans. So—get started NOW. Don't wait until your business slumps. Don't give it a chance to stop. You KNOW it is likely to stop soon, so begin to push it now and keep it humming all winter. Make winter profits.

Take Care of Your Motor

A LITTLE ATTENTION to your motor now may save you many dollars later on. The use of an oil that isn't just suited to your engine may cause a lot of trouble.

THIS OIL SUBJECT is one to which you should give careful consideration. We suggest that you come to our place of business, ask our oil man to investigate the oil that is in your motor, tell you whether it is right—and if it isn't right let him put in the ——— oil, that is best suited to your needs.

THE TEMPERATURE IS CHANGING. You should also change your oil.

Consulting our oil man costs you nothing. Drive up any day.

Blank & Blank Garage

Tel. Prospect 123 7 Hopedale Avenue

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Set Up This Window



Here's How to Do It

GET two drums of oil of the size shown. Get other cans of oil of the sizes shown. Get some cardboard, stiff enough to stand up, a bottle of show-card ink and a small flat brush, which you should be able to get in any art supply store.

Don't be scared because you never lettered a card before. Line in lightly the top and bottoms of the lines of letters, space approximately with light pencil lines and then go ahead and letter. The chances are you can do a job that will be just as serviceable as any you could get from a high-priced painter. Maybe one of the girls in your office or one of the men in the shop may prove to be quite a hand at lettering. If you have no background such as is shown, erect one by putting up some 2 x 4's for a frame and filling in with cloth or board. In a future issue MOTOR WORLD will give plans for building window fronts and backgrounds.

Send Out These Letters

Read the opposite page

Oil Letter No. 1

With cold weather at hand you may be able to put a lot of pleasure into life if you investigate now the oil that is being used in your motor.

Maybe you have an oil that is not suited to your engine. Maybe it is a good oil but the wrong grade, and maybe it is an oil that isn't any good at all.

We have equipped our organization to handle oil questions for motorists. If you will drive down, let us look at your motor, ascertain its make and length of service, we can advise you as to whether its oil is right or wrong.

We handle ——— oils, which are a tested lubricant of high quality and we are sure you would be pleased with the oil we would recommend, in case your motor needs a change.

Oil Letter No. 2

Does your engine knock or smoke? Listen carefully. Put your ear down close with the hood raised and see if everything is working smoothly.

If there is a slight knock you should give it attention now. Later it may require the services of a repairman, and maybe his bill would be larger than you expect.

Many small knocks are caused by nothing but the wrong kind of oil. It often takes an expert to tell just what kind of oil to use, and for the service of yourself and other car owners we have added an oil man to our organization.

It won't cost you anything to drive down and ask him to look at your motor. Maybe he will advise a change of oil and maybe he won't.

We handle ——— oils, which are a tested lubricant of high quality. We know we can give your motor the RIGHT oil and the right oil will give YOU satisfaction.

Oil Letter No. 3

Have you changed the kind of oil you have used all summer in your motor?

You may have drained it at intervals, but are you using the same oil you bought for summer service?

Using the wrong oil often causes a lot of trouble. It may start your motor on the road to the repair shop, whereas a little attention to the oil question now may save you much money later on.

In order to care for the needs of motorists in this city we have secured an oil expert whose duty it is to examine the motors of all those who come to us and advise them honestly as to the kind of oil they should use. Many times he tells them their oil is all right, so you see we don't make a sale to every one who comes in.

We handle ——— oils, which are a tested lubricant of high quality, and we KNOW we can oil your motor to your satisfaction.

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With an INVENTORY CARD SYSTEM

You Can Run Your Business With Throttle Wide Open

CAN you tell instantly: 1—How many Blank ⅞ porcelain spark plugs you have in stock? 2—How fast this stock is moving? 3—When the sales of this plug are heaviest? 4—Cost of plug and extra discount for quantity orders? 5—Location in stock room? 6—When plugs have been ordered? 7—When received? 8—What orders are short? 9—Whether any plugs are missing?

Unless you can tell these things, and tell them **instantly**, you are driving your business with a loose rein; you are courting loss and possible ruin.

Time and Labor Saver

The card inventory is not a necessity but it is a great help and a time-saver in connection with any accounting system. Every dealer selling accessories, every garageman, and every supply dealer should have one. The cost is small, the labor required in keeping it up is negligible, and the returns are many times the investment.

Here are some of the benefits such a system gives:

First and foremost it gives you a perpetual inventory of your stock. Therefore when you want to know the value of the stock you have on hand at the end of the month so that you can make up a true statement of profit and loss, you do not have to go over all your stock, counting and evaluating each single item.

Instead, you turn to your inventory cards, and at a glance you know how many Blank ⅞-in. long porcelain spark plugs you have on hand. Furthermore, instead of counting back through the pages of your accounting system to determine how many of these spark plugs you have sold during the month and what the total cost was to you, you simply turn to the inventory card and—presto!—you have your information in a moment.

Price and Discount Card

But these are not all. It is a purchaser's guide. It shows you what prices and what discounts you have been obtaining and where is the best place to purchase more goods.

System Does Not Forget

The card inventory system shows at a glance just how fast each article is moving. Of course, if a man is in very close touch with his business and his business is not too large, this is a minor point, for he can carry most of this information around in his head. But even this man is likely to forget some item. The card index shows everything in black and white. It shows what articles there is a big demand for and what are falling behind in sales. It is then an easy matter to determine whether these goods do not sell because of poor merchandising methods or because they are growing unsalable. In the latter case it would be well to sell them at cost rather than run the risk of not selling them at all.

A CARD inventory system bears the same relation to your stock as your bank book or check book does to your bank account and is just as necessary. The money received by the bank is added to your balance and the money paid out is subtracted from your balance. The same principle is used on the inventory card, but in this case, since there are many items in stock, a separate card is required for each item. Take mirrors, for example: When a dozen mirrors are received the quantity is entered on the inventory card which is made out to Mirrors, and as the mirrors are sold, subtractions are made from the total quantity so that the balance indicated by the card must always equal the number in stock. This is the principle upon which all perpetual inventory systems are based.

Motor World is prepared to furnish these Inventory Cards on excellent quality stock and in two standard sizes, measuring 8 x 5 and 6 x 4 inches. They will fit the standard card index drawers. Both sizes sell for $1.50 *per* 100 *and* $13.50 *per* 1000.

It indicates when the sales of each article are heaviest; it gives a record of supply and demand for each article throughout the year. It enables you to prepare for future business. A year hence on looking over these cards you will note when there was a big sale of this or that article, so that you will know in what quantities to buy next year. With this certain knowledge your buying becomes a science instead of mere guesswork. You know almost exactly how many you will need and you are able to buy to better advantage; probably you may buy more of some things than you would have without this knowledge and therefore you will obtain better discounts. On the other hand, the figures in the inventory cards will prevent overbuying.

Quick turnover is fostered by close study of the cards. It shows how long it is before this or that stock is sold and more must be ordered. It is hardly necessary to add that quick turnover means maximum return on minimum capital; it is running the business with the throttle wide open—a condition of highest efficiency.

Simplifies the Inventory

The card has the selling price of the plug and the discounts obtained when different quantities are ordered, written on it. Thus in determining the value of the stock at the end of the month there is no temptation to guess at the cost; it is there, and there can be no dispute on that score. Furthermore, in ordering goods you can tell at a glance whether it will pay you to order this or that quantity—whether the extra discount for the larger number is worth the tying up of that much capital.

The bin number and location may also be placed on the card. This is of no importance to the small dealer except when he is breaking in a new clerk. But it is a necessity to the large garageman or supply dealer. Even in the case of the small dealer it has the advantage that it may be of use in locating some small article that has become hidden. Certainly it should be of use if there were any bins with miscellaneous articles in them. It encourages order and systematic arrangement of goods, for it emphasizes the necessity for a place for everything.

The card may also show when plugs

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were ordered and when received. These items are important as a matter of record, but in addition the two dates give an idea, when ordering, as to how long it will be before the goods are received. Or, to say it another way, it shows how far in advance the order must be placed so as to have the goods on hand by a certain date.

When the order is mailed the order number also can be placed on the card, so that if any question arises regarding the order it may be found on the inventory card as well as on the duplicate order blank.

When the goods are received the order number may also be recorded. Ordinarily this is of no use, but it is an advantage when the goods are not complete. It is an aid in keeping track of the missing articles—those that may have been put on back order.

The perpetual inventory card is a check on dishonesty and carelessness, for the sales slips, the inventory cards, and the stock actually in the bins should always agree and a discrepancy is a danger signal.

The card system is preferable to an inventory book because it is easier to handle and more elastic. The cards should be carried in a small filing cabinet, which should be conveniently placed —just back of the counter or possibly right on the counter, in which case it would be wise to have the cost figures indicated by letters. Placing the cards all in one box instead of tacking each up over its own bin is to be preferred because it centralizes them; they are all at one point instead of being scattered.

It is just as essential to know the amount of stock on hand at the end of the month as it is the amount of cash in the drawer at the end of the day. No true statement of the condition of the business can be produced without having an accurate knowledge of the total value of the parts, accessories and supplies on hand. It will not do to guess; an estimate is useless. The facts must be known with accuracy, and this means an INVENTORY must be taken. This may or may not require a large amount of work, depending on the system followed. If every item of stock is counted it will mean the expenditure of a great deal of time. BUT THIS IS NOT NECESSARY except once a year.

Two cards are illustrated in Figs. 1 and 2. They are identical as to form, but one is filled out monthly and the other daily.

The body of the card is divided into halves, the ruling on each side being identical. This is merely to economize space. The back of the card is also ruled.

The Inventory Card

Each half is divided into three main columns, which are self-explanatory—Received, On Hand, Sold, Fig. 1. The first of these columns is subdivided into three parts, headed Date, From, Quantity. When goods are received, such as a dozen spark plugs, for example, the Quantity is entered, and the Date, which might be Jan. 1, is put down. The number of the concern is placed in the From column, and in this case is No. 1. This is a new line of spark plugs and there was none on hand when this card was made out, therefore the total quantity On Hand is 12. On Jan. 3, three spark plugs are sold and an entry is made in the Sold column. This leaves nine On Hand.

Two days later four of these spark plugs are sold, leaving a balance of five On Hand. The dealer immediately notes that the sale of these plugs is rapid and therefore decides to order some more, so he telephones the jobber that he must have 5 dozen the next day, and when they are received the entries are made and the stock is brought up to 65.

These spark plugs are known as the Blank, open-end, ⅞-in. long porcelain type, and these facts are set down at the top of the card. The list price is $1, the discount is 30 per cent, the net cost 70 cents, and the selling price is $1.

The following week, on Jan. 12, a salesman from the Mutual Jobbing Co. drops in and happens to mention that he will sell this particular spark plug to the dealer for 50 cents in lots of 5 dozen or more.

The dealer is not ready to buy any more of these plugs, and probably will not be for a month or six weeks, but to eliminate the chance of forgetting, he gets out this inventory card and makes an entry to the effect that the Mutual Jobbing Co. (No. 2 on the card) will sell these plugs to him at a 50 per cent discount in lots of 5 dozen.

This card enables him to order from the cheapest concern; he does not have to trust to his memory, but the figures are down on the card in black and white. Later, the U. S. Jobbing Co. and the Albany Jobbers give him the same discount as the Mutual Jobbing Co. and they offer him better terms and quicker service, with the result that he crosses out the Mutual Jobbing Co.

About six months later the tremendous production that the manufacturer of this plug has attained makes possible a sweeping reduction; the list price is reduced to 75 cents and the wholesale price to 25 cents, which is a discount of 66 2/3 per cent. This price is quoted by the New York Jobbers Co. and is lower than that of any of the other concerns the dealer has been doing business with; therefore the old prices quoted by this company are erased, unless a new card has been put into use meanwhile and the new prices set down.

If it is decided to make the entries daily, they MUST be made daily. In other words, it will not do to allow the sales slips to accumulate for several days. At the beginning of each day the sales slips of the day before must be entered on the inventory cards. When business is not too brisk, it would be possible to carry the box containing the cards either on the counter or directly behind it, and after sales were made the entries might be placed on the cards so that at the end of the day the cards would be complete.

But when there are several customers waiting, this method would be impossible and it would be necessary to hold the sales slips until the end of the day and make the entries then or the next morning.

When there are several sales of one article it is not necessary to enter each sale on the inventory card, but merely to set down the total. It is easily seen that if the entries are not made for a

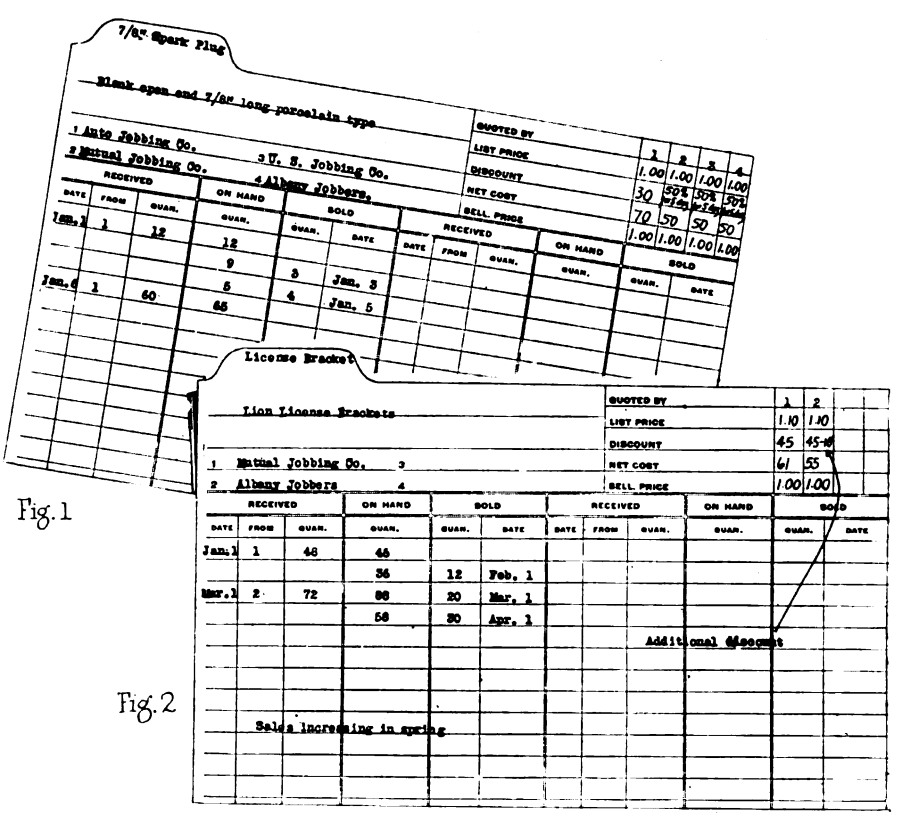


Fig. 1

Fig. 2

Fig. 1—MOTOR WORLD'S *inventory card with entries made daily*
Fig. 2—*Card with entries made monthly*

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few days that there will be such a great number of sales slips that it is doubtful that they ever will be made; therefore the necessity for doing this work every day cannot be urged too strongly.

Some dealers may prefer to make their entries weekly or monthly. This does away with the necessity of doing this work every day, but there is the disadvantage that it piles up and adds considerably to the work of obtaining the statement of Profit and Loss at the end of the month.

In case this plan is followed it will be necessary to save the sales slips for the week or for the month, as required. Then each item, such as spark plugs, is counted, and the total sold, as indicated by the slips, is set down on the inventory card.

The Casing and Tube Record card, illustrated on page 88 of the Oct. 10th issue, is preferable for inventorying tires and tubes because the record it affords is more complete. However, if the inventory card is used proceed as follows:

In the case of tires and other expensive articles which are provided with serial numbers, it is best to enter each tire separately, Fig. 3. When the tires are received, instead of placing the number in the Quantity column, the serial numbers are put down, as is also the Date and the number of the concern from whom the tires were purchased.

Suppose that this was Jan. 25. On Jan. 30 one tire is sold and this is noted in the Sold column by writing down the serial number. This reduces the number On Hand to two.

Inventory Yearly

The installation of this system requires the taking of an inventory, but this need not be done again for a year. Obviously on installing an inventory system the only way to determine the stock On Hand is by counting it. In this case assume that the system was installed the first of the year and it was found that there are seven Acme horns in stock, so this is noted in the On Hand column, Fig. 4. The entries from this point on are the same as for the cards so far described.

The preferable way to take inventory is not to wait until the end of the year, but to count a few items of stock each month, so that when a year has passed the inventory is complete. Taking inventory is merely the counting of the stock to check the readings on the cards.

There is an added advantage in splitting this work up among the months of the year; it discourages dishonesty. An employee that knows that some of the stock is checked every month realizes that there is greater chance of detection than when it is done once a year.

Obviously, the accessories and parts are assets, and therefore their value must be known. Assuming that all the cards are up to date at the end of the month, the taking of the inventory is a short and simple operation. The number of articles of each kind in stock is simply multiplied by the cost of the stock.

This is all there is to be said, except when frequent purchases are made at varying prices.

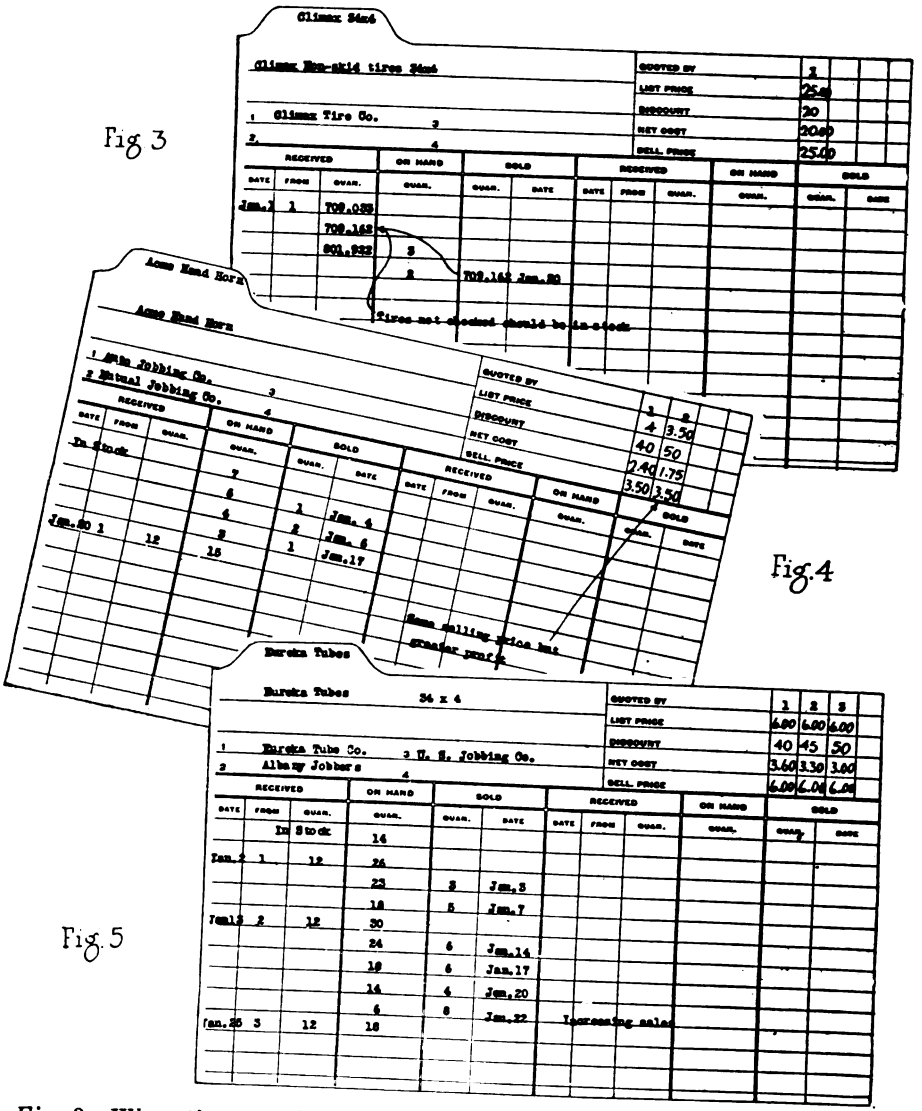


Fig. 3—When tires are inventoried the serial numbers are put down when the tires are received and again when sold. Check marks in the Received column show what tires have been removed from stock

Fig. 4—Illustrating how card is made out when starting the system

Fig. 5—This illustrates how value of stock with fluctuating price is figured

For example, let us consider Eureka tubes. On Jan. 1 there were fourteen on hand and at various intervals during January tubes were purchased and sold. On Jan. 2 twelve tubes were bought from concern No. 1 for $6 list, less 40 per cent. On Jan. 13 twelve tubes were bought from concern No. 2. And on Jan. 25 twelve more were bought from concern No. 3. Concern No. 2 gave a discount of 45 per cent and No. 3 a discount of 50 per cent. During the month eighteen tubes were sold, so that when the month was over there were eighteen tubes on hand. Now the question is, which of these tubes were bought at a discount of 40 per cent, 45 per cent and 50 per cent?

How Value Is Determined

This question might be determined by closely examining the stock, but there is a simpler way, and that is to assume that the first dozen tubes have all been sold, although the second dozen was ordered before the first dozen was completely disposed of, and therefore it is not unlikely that some of this original stock is still on hand.

Nevertheless it is reasonable that the first dozen tubes have all been sold and that there are no more in the stockroom. Furthermore, six of the second dozen have been delivered to customers; therefore the eighteen on hand at the present time consist of six from the second order and twelve from the third order during the month.

The net cost of the former is $3.30 each, and the net cost of the second is $3 each, and, therefore, the total cost of the tubes is six times $3.30, plus twelve times $3, which is $55.80.

The above operation may be stated as a rule. If the total On Hand is less than the number ordered the last time, then the total cost is the number multiplied by the individual cost of the articles last ordered. If there are more on hand than were received on the last order, then the surplus is charged at the individual cost of the previous lot.

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Placing the Blame

By Ray W. Sherman

SICK and tired of monkeying with him!" exclaimed Tommy Trumbull. He looked over reports that had been turned in by Roberts, one of the salesmen who had some time ago been added to the selling staff of C. J. Reilly, Inc.

"What's the matter now?" asked Reilly, big boss and founder of the business.

"This guy, Roberts!" Tommy retorted. "He doesn't seem to be able to get anything through his head. He simply won't or can't do things the way he ought to, and he's getting so he's about useless. He sells a car once in a while, but he gets on my nerves."

"What now?"

"Oh, for a starter: the boys are supposed to report verbally to the stenographer and save the time they used to spend in writing out reports. They all do it except Roberts. He makes a feint at reporting verbally and then turns in long written reports on what he has been doing.

"Rather Disagreeable, Isn't He?"

"I've spoken to him about it several times. Each time he pulls up a little, but in a few days he's back at it again. I'm getting sick and tired of monkeying with him."

"H'm," mused Reilly. "Rather disagreeable, isn't he?"

"He certainly is," Tommy continued, and would have continued still further had not Reilly asked:

"I wonder if you could be to blame for the way Roberts does things."

"I!" Tommy nearly jumped out of his chair.

"Yes, you," said Reilly with a quiet smile. He turned around in his chair, faced Tommy and with smile-warmed words added:

"You know, Tommy, sometimes we don't get the right slant on things. Have you ever considered just who and what you are around here?"

"Sure! I'm sales manager," replied the young man.

"Exactly. And as sales manager what is your job?"

"To manage sales."

Must Handle Routine

"Again you're right! And managing sales means that you must handle a lot of the routine, must tell the men what to do, must study, analyze and investigate, and must make the men more proficient and more efficient. That's the job of the sales manager.

"Let us analyze your job: One part of it is managing the men, and one of the men is Roberts. He came to us after several years of experience in selling cars. His experience had been along the old lines. A part of the old line is to make written reports of more or less length on sales work. Perhaps some sales manager drilled him everlastingly on reporting. It may be he was trained by a sales manager who believed the evidence of work was a long report.

Young in Years, Old in Ways

"And now he comes to us. He hasn't been here long before we changed our selling system, and it is hard for him to change his ways. He is young in years, but he is an old dog in his ways. We've got to teach him new tricks.

"Teaching the new tricks is your job. That's what I pay you money for. I made you sales manager because I thought you would be a good teacher—and you are—but I don't think you should feel discouraged with yourself or sore at Roberts just because teaching proves a little difficult. When you encounter obstacles in a sale, you only plan and work the harder. Now that you have encountered an obstacle in your teaching you must do the same. Let it add zest to your work.

"It isn't all the fault of the salesmen of the motor car industry that so many of them are below par, Tommy. Not by a darned sight! We have all heard sales managers declare that their salesmen are rotten. A lot of them are—and then some. But it isn't all the fault of the men. In many cases it is largely the fault of the sales managers.

More Than Just Selling

"The manager's job is more than just telling men where to go and whom to sell. They should also tell HOW to sell, and if they aren't capable of teaching men how to do things they aren't qualified to be managers. You know, Tommy, there is one principal qualification in teaching a dog, and that is that you must know more than the dog.

"Aside from the fact that we have many below-par, unscientific, unaggressive salesmen in this business, we also have a lot of sales managers who are in about the same class. I know sales managers who assume that all there is to securing a salesman is to hire him at so much per and set him to work. That's the wrong dope. I don't consider any salesman qualified to sell the Sennett until I have taught him to sell the Sennett. Would you handle a gas engine salesman a safety razor sample case and say: 'There you are, old top! Hop to it!'?

"Above the heads of all of us is knowledge, information and science that we all should be reaching up, pulling down and passing on to the men below us. We should never forget that the sales manager is a teacher. He should always be teaching his men—making them better. Thousands of mediocre salesmen would be made much more productive for themselves and for the house if they only had a little instruction, a little inspiration, a little pushing along the path of progress.

"How are you going to do this? By sales meetings, which we already are holding. By individual handling, which Roberts seems to need. By thinking and planning ways of making each man better and stronger. There are many ways.

Poor Men Means Poor Management

"To my mind, Tommy, the manager who has poor men is a poor manager. He will not keep poor men. Either he will make them better or get new ones. And the manager who can't take material and manufacture it into something is not an A-1 man for the job. If I were you I'd make the transformation of Roberts a big job on my program. After a real, big, hard try it's time then to think of making a change. But give both himself and yourself a fair chance at the job first."

Minneapolis Pushes Bonds

MINNEAPOLIS, Oct. 15—The Minneapolis Automobile Trade Association is organizing a Liberty bond sales campaign, and is sending to all dealers in the Ninth Federal District a letter pushing the campaign to sell $175,000,000 in the States of the district. Each owner of the 300,000 automobiles is asked to display on his machine a bond sale poster, the windshield preferred. Locally the campaign is divided into committees covering cars, trucks, accessories, tire dealers and tire repairs, oil stations and station operators and garages. Chairman H. E. Pence started the campaign with a luncheon to committee members Oct. 8. The association has recognized and urged use of the Chicago used car quotations.

Duluth Licenses Used Car Men

DULUTH, Oct. 15—Dealers in used cars must hereafter be licensed. The city council has passed an ordinance under the terms of which a license costing $2 must be obtained by all dealers selling used cars. The measure also provides for the recording of all used car purchases and sales by dealers and the submission of such reports to the police department.

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Repairshop Shortcuts

From The Motor World Roadman

No. 1395—GABRIEL SNUBBER KINK

The ordinary method of replacing Gabriel snubbers and winding the leather straps up on the car is difficult. By compressing the interior of the snubber in a vise and locking it in the compressed position with a bent metal strip, the strap may be wound on before replacement. When in position the locking strip is removed and the cap replaced.—Chas. Marquard, American Motors Co., Battle Creek, Mich.

No. 1396—INSTRUCTION BOOK RACK

Instruction books are rendered instantly accessible if hung on chains from a rack placed at the rear of the foreman's desk. All parts of the chains, rings and rack should be strong enough to make theft difficult, and the chains should be long enongh so that the reader can use the books without difficulty. Any book can be seen at a glance, and each is automatically returned to its proper position.

No. 1397—COWL PROTECTION

When freshly painted, the cowl offers a most convenient place for dust and dirt to gather. This dust embeds itself in the soft paint and destroys appearance. A sheet metal cover may be provided for placing over the cowl immediately after the painting. The rear edge of the cover rests on the windshield ledge, and the forward edge rests on the hood ledge at the front edge of the dash.—L. C. Greenameyer, Reo Service Station, Lansing, Mich.

No. 1398—SOLDERING ACID CONTAINER

Soldering acid is usually in a common glass. This is easily tipped over, and being exposed, is subject to breakage. By providing a large wooden block, drilled out to hold the glass, a base is supplied that not only renders tipping over difficult, but also protects the glass. A small hole may be drilled in the top to carry the acid brush.—Hannan & Henry Garage, Cadillac, Ogdensburg, N. Y.

No. 1399—CLUTCH SPRING RETAINER

It is usually found necessary in removing the clutch from Buick cars to disassemble the clutch spring housing. Dismantling may be obviated by the use of two steel hooks caught on the internal gear and fastened to the clutch hub by the two clutch hub bolts. The central retaining nut may be then removed and the clutch taken from the car and refaced and again replaced with a minimum of work.—J. F. Walter, Buick Motor Car, Battle Creek, Mich.

No. 1400—SHOP ENTRANCE GUARDS

In those shops having the entrance in the form of a narrow passage way considerable time is lost in manoeuvering to avoid striking the sides. In such cases converging guard rails may be placed at one side of the entrance that will automatically swing the car into line with the door and prevent accidents. Another feature of this guard rail is that it holds the car to one side of the entrance, so that any person caught in the entrance has a safety zone in which he can avoid the car.—S. Rathburn, American Motors Co., Battle Creek, Mich.

No. 1401—REPLACING REAR WHEELS

It is not always an easy matter to replace rear wheels on axles of the full floating type, as it is not good practice to drive the wheel in place. However, both wheels may be pulled into place at the same time by placing a threaded shaft through the axle housing and tightening up on two large nuts placed at each end against the wheel hub. Each nut is provided with two handles, one bent to form a crank for speed work and the other a long straight handle slipped into a hole provided for that purpose and used as a lever.—Oakland Motor Car Co., Pontiac, Mich.

No. 1402—PAINT REMOVING

When removing paint with a liquid paint remover much of the liquid is wasted. Three sheet metal troughs may be provided and fitted around the car, inclined in a manner that permits drainage to a catch basin. Paint remover may be then freely applied to the car surfaces and no particular care need be taken to prevent splashing or waste, as the surplus remover is caught by the troughs and carried to the basin. This surplus amount of remover serves to soften the paint quickly and greatly facilitates the work.—L. C. Greenameyer, Reo Service Station, Lansing, Mich.

No. 1403—TIRE GAGE HANDLE

Loss or theft of tire gages may be made difficult by soldering a strap iron or brass handle to the body of the gage. It is then difficult to get the gage into a pocket; the handle provides a means of hanging up the gage and facilitates its use.—S. E. Barber, Hodskin Garage, Canton, N. Y.

No. 1404—CONNECTING ROD JIG

Scraping in new crankshaft bearings on connecting rods may be made much easier by the use of a special jig permitting the connecting rod bearing to be bored out on a drill press. The wrist pin is slipped in place and caught between two V-blocks fastened to the side of the T-bed plate of the jig. It is held in this position by two planer stops, automatically lining up the crankshaft bearing with the wrist pin. The entire fixture is clamped to the table of the drill press under the boring head, which is simply a rod that is cut out to hold a tool steel bit clamped in place by a set-screw. The new bushing is bored out to about .003 in. undersize, after which it is scraped to a fit on the crankshaft in the usual manner. The use of this jig cuts the scraping process down from 3 hrs. to about 30 min.—S. E. Barber, Hodskin Garage, Canton, N. Y.

TIRE VALVE KINK

Tire valves frequently stick in the valve stem. In such cases, if the outside of the valve stem be heated with a match or a torch, the valve may be readily taken from place. The heat expands the valve stem and frees it from the valve proper, permitting the removal.—S. E. Barber, Hodskin Garage, Canton, N. Y.

Scrap Metal Prices

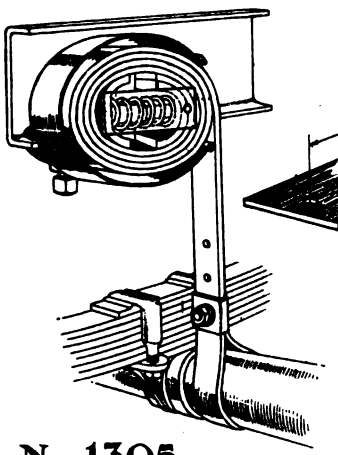
NEW YORK, Oct. 12—Following are prices paid by New York dealers for scrap metal during the past week. They are from *Iron Age:*

	Cents per lb.
Copper, heavy and crucible	23.50
Copper, heavy and wire	23.25
Copper, light and bottoms	20.50
Brass, heavy	15.50 to 15.75
Brass, light	11.50 to 12.00
Heavy machine composition	22.00 to 22.50
No. 1 yellow brass turnings	16.25
No. 1 red brass or composition turnings	19.00
Lead, heavy	7.00
Lead, tea	6.00
Zinc	6.00

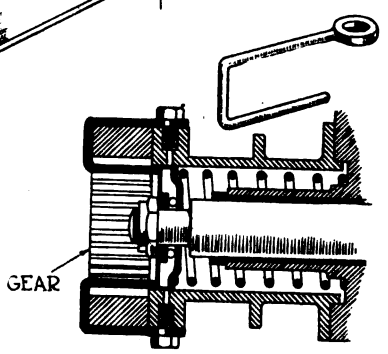
Simons Overland Dealers Gather

DETROIT, Oct. 12—The Simons Sales Co., eastern Michigan distributer for Willys-Overland products, entertained more than 100 dealers here last week at a dinner, where discussions of business took place. It developed that the Detroit Overland concern sold 300 cars in August and September at a retail value of $156,000. Dealers were told to prepare for the future and save trouble in delivery during the winter.

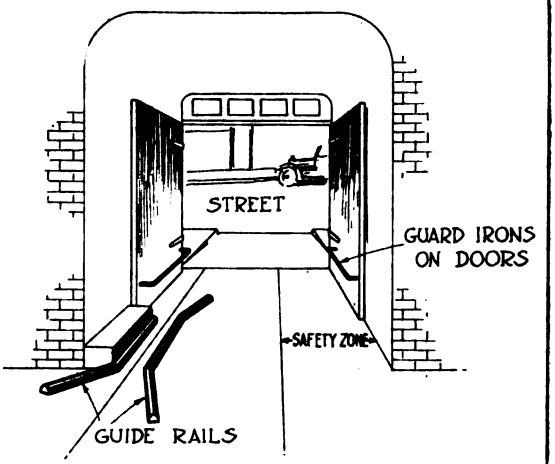
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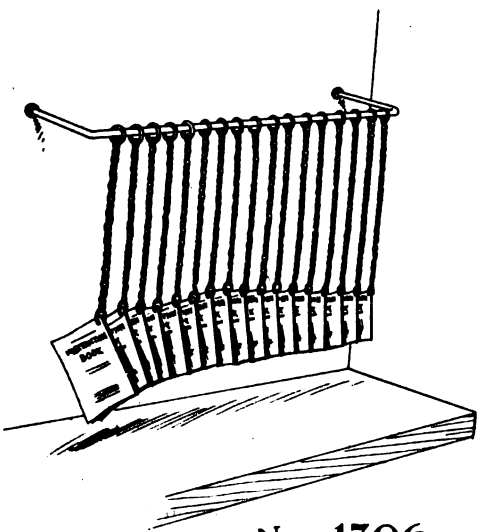
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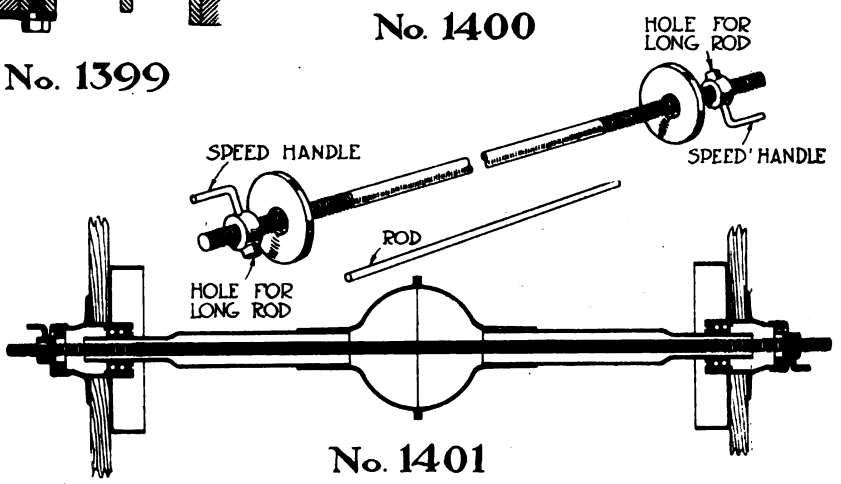
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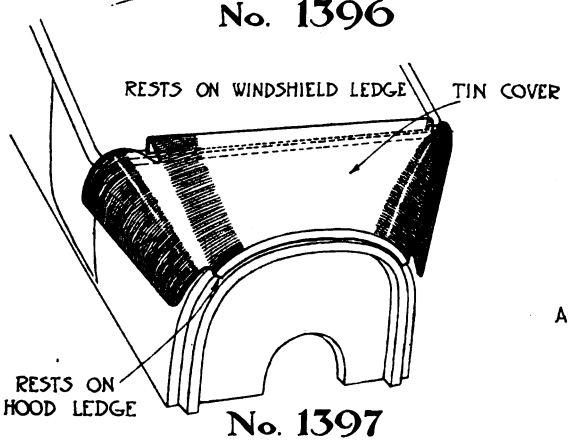
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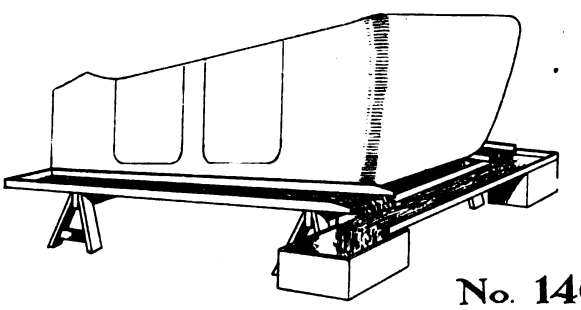
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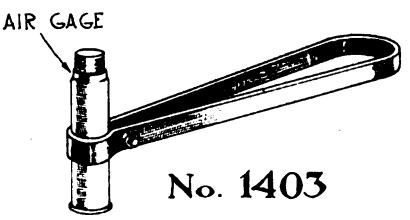
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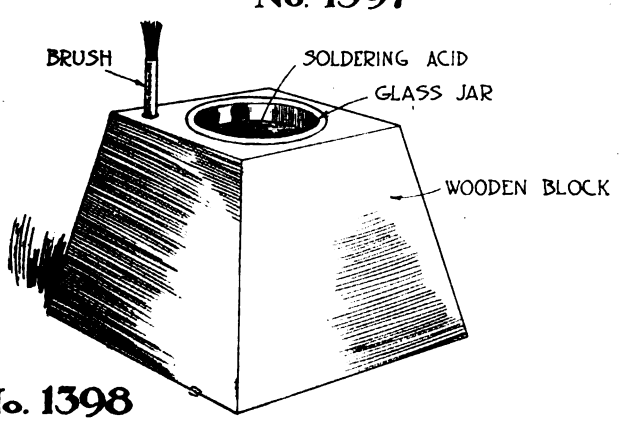
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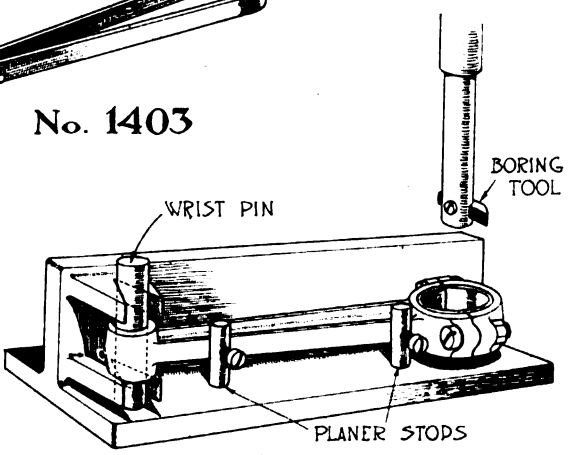
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How to Plan a New Building

5—Location of Different Departments

They must be placed so that there is no lost motion. It must be easy for both customer and employee to transact their business

See page 40 for illustrations

By Harold F. Blanchard

THERE are two things to consider in determining the relation of the different departments:

1—The effectiveness of the building as the most important item in the owner's merchandising equipment.

The departments must be placed so that it will be easy for customers to take advantage of the facilities offered by the different departments. It must be easy for the customer to get to the point he is headed for, easy for him to obtain the service he desires, easy to pay his bill and easy to get out again after the business is completed.

2—Maximum efficiency among the employees.

This means, first of all, an arrangement which will minimize the necessary steps. Departments should be so laid out that customers cannot interfere with the regular work of the employees nor employees with the transaction of business between customers and other employees.

The layout of a complete establishment is described, but if in a given instance any departments are eliminated the considerations for laying out the other departments need not be modified. In other words, by including showroom, accessory store, offices, garage, shop and the minor departments in one general scheme, it is not necessary to take up combinations of these separately.

The various departments naturally group themselves into three divisions:

1. Showroom unit—Showroom, accessory store, offices, rest room, accessory stock room, etc.

2. Shop unit—Repairshop, including possible subdivisions such as battery room, vulcanizing room, forge shop, machine tool room, parts stock room, tool room, etc.

3. Garage unit—Garage, oil room, chauffeur's room, etc.

For the purpose of saving steps, it is desirable to have 1 and 3 together, to concentrate all forms of work in as compact an area as possible, but it is rarely feasible to carry this idea out for reasons which will be detailed later.

FOLLOWING articles will take up the question of scientific layout, after that plans for standard plots will be considered, and then finishing, decoration and equipping of the interior will be described.

We shall be glad to draw a plan for you or give you any other aid in your building, free of charge. But be sure to send full details, including a sketch of the plot, showing position of streets.

Generally speaking the garage space may be located by utilizing whatever is left over after the other departments are placed, but there are some exceptions to this rule.

EACH OF THESE THREE DEPARTMENTS IS AN OBLONG. THERE ARE FEW EXCEPTIONS, AND THE TEST OF A SATISFACTORY, ECONOMICAL LAYOUT IS TO CHECK THIS POINT. HENCE THE IMPORTANCE OF CLASSIFYING THE VARIOUS DEPARTMENTS UNDER THESE THREE HEADS.

The length and breadth of each oblong may not be known, but that it should be an oblong is almost certain. Therefore, if after a plot is selected and the number of stories tentatively decided, the first step is to block out roughly the most desirable locations for these three sections. The dimensions may have to be changed later on, and it might even turn out that the situation of one or all three might have to be shifted after the details were worked out, but this is very doubtful.

The showroom unit, obviously, should occupy the frontage space. Where the frontage is broad it is usually better to make the unit long and shallow than deep with only part of the frontage occupied.

It is not advisable to break this unit up by running a driveway through it. It is a unit and should remain so. There are many reasons why each department in it should be close to the others, as will be explained, and therefore it should not be divided.

Usually there are no real objections, and often some advantages in placing the driveway at the side, or if the lot fronts on more than one street it is often feasible to do without a front entrance for cars.

The most important consideration in placing the garage unit is that it be easy of access for cars. As much of the street floor space as is possible should be devoted to the storage of cars. And upper floors used for garage purposes should be the ones adjacent to the first if possible. Fortunately this does not usually interfere with the location of the shop unit. The latter is best placed on the top floor at the rear. The top floor is preferable because window illumination is better and, in addition, skylights may be used. Good light for the garage is not so important. There is less traffic to the shop than the garage, so that the extra distance which must be traveled by ramp or elevator is not objectionable.

The shop is more easily isolated when on the top floor, which makes it easier to prevent interference by owners.

It is situated at the rear because the view of the shop from the street is generally objectionable; also if clear glass is used or in any case when the windows are open time is wasted by men gazing out of the windows.

The objection to locating the shop on the top floor, particularly if the building is more than two stories, is that time is wasted in traveling to and from the offices, and possibly the parts department, on the first floor.

From this point of view it is much

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more desirable to put the shop on the ground floor, but another quite satisfactory solution is to install equipment which will largely eliminate the necessity for traveling back and forth. This might include speaking tubes, inter-office telephones, dumbwaiter, pneumatic tube system, etc.; probably not all these things but some of them.

As a rule the accessory stockroom is at the front of the building somewhere near the store, and if spare parts are carried in the same room, they may be delivered to the top floor by dumbwaiter, in which case it may be desirable to place the shop at the front.

Inasmuch as it was stated that the garage unit should be located so that there is no lost motion in getting to the street, it is natural to think of the basement, only one floor away. But it is not desirable for car storage because it is usually damp and dark, and even if it is not, owners have a prejudice which must be met by a cut in the storage rates. Even if it is well lighted due to the ground sloping away it will not command the rates that may be obtained for the second floor.

Under these circumstances it may be used for the shop unit, but if it is the slightest bit damp, it will be difficult to keep men in wet or cold weather.

SHOWROOM UNIT

This consists of showroom, accessory store, accessory stockroom, private office, general office, men's toilet, ladies' toilet which should preferably be included in a rest room, and a conference room.

If the plot is on a corner the showroom should be placed at this point.

The accessory store should also occupy a part of the frontage and should be a distinct unit from the showroom although alongside it. The store should be placed between the driveway, if there is one, and the showroom, thus making it very easy to reach the store either from driveway or showroom. This arrangement also makes it possible to have a glass partition between store and driveway so that people may see the stock displayed on shelves through the glass. Visibility is enhanced by making the shelves of glass.

The rule laid down for the three main divisions holds also for the individual rooms; each should be an unbroken oblong. The depth of showroom and accessory store should be such that they will be of the desired area when the full frontage is taken up by these two rooms.

The accessory stockroom should be adjacent, usually directly behind, the store and connected by a door. It is advisable to have a stockroom so that unsightly articles may be kept out of sight. There is no question but that the store may be conveniently made of sufficient size to accommodate everything carried, yet there are some things which are roughly wrapped or boxed which detract from the fine appearance the store should possess.

The general office must be well lighted since the work is clerical. If the building is on a corner the office should be directly back of the showroom with a window on the side street. If the building is not on a corner there is little choice where the office is located so long as it is convenient to store, showroom, garage and shop, unless it is convenient to place it at the front.

Inasmuch as the private office will be used more for conference work, its lighting is not so important, so that ordinarily it will be satisfactory to situate it at the rear of the showroom adjacent to the general office. Any remaining space may be used for toilets and ladies' rest room, or for a conference room.

The best method in laying out the showroom unit is to decide upon the area required for showroom and accessory store. More details regarding this will be given in a later instalment. Select a strip all across the front of the building equal to this area and then divide the accessory store and showroom so that their areas will be right. Then the combined area of all the other rooms is calculated and a strip corresponding to their area is laid off the full width directly at the rear of store and showroom. This strip may then be divided up between offices, stockroom, toilets.

By following this method every inch of space is utilized efficiently and every room is an unbroken oblong. It should hardly be necessary to point out that a room with four unbroken walls is the most desirable for any purpose whether cars are to be displayed therein, accessory shelves and showcases to be put up, office furniture to be arranged, or what not.

Accessory store and showroom should be distinct, although they may be connected by a door or even an archway, thus making it possible for one man readily to look after both in case this is ever necessary.

The two should not be combined because they do not look well together. No man would think of trying to combine showroom and shop, even though the latter were clean and attractive. They simply don't go together and that is all there is to it. Then, too, the shop is noisy. The same arguments hold regarding combining showroom and accessory store, although the objection is naturally not so great.

Car customers will be distracted and interrupted by transactions in the accessory store. One of the main reasons for having a showroom is to enable the salesman to work at 100 per cent efficiency, to have his every effort register the full count in its effect on the prospect, and to a degree the accessory store defeats this purpose.

Notwithstanding all arguments to the contrary there will always be some who will want these two departments combined, and consequently it is advisable to show the best way of doing it. The usual method is to install shelves and showcases along one wall or in one corner. This arrangement always is an eyesore. Better results are obtained by making the two departments as distinct as possible although in one room. Preferably that part of the space directly back of the accessory show window should be set aside for accessories. A showcase might be placed along the side adjacent to the showroom in lieu of a partition. And in the space thus blocked off shelves and possibly more showcases might be placed.

Another good arrangement is to combine the accessory store and stockroom in an alcove, using a showcase along the line dividing showroom and alcove. Back of the showcase are shelves and glass cabinets, and behind these are rough shelves for additional stock.

All the auxiliary rooms, or part of them as desired, may be placed on a mezzanine balcony provided the ceiling is 15 ft. or more. If the shop is on the second floor at the front this arrangement has the added advantage that the offices are halfway between showroom and store and the shop. This is an exceedingly convenient layout and any disadvantage due to having the offices above the first floor level is offset by the fact that they are near the shop.

Unfortunately most of what has been said cannot be applied if the driveway cuts the showroom unit in two.

SHOP UNIT

The shop unit should be as far away as possible from the showroom and store so that there will be minimum chance of patrons running up to the shop to watch what is being done on their cars. Furthermore, the noise, the smoke and the dirt should be remote from these departments.

If cars are sold a service station is maintained, and then it is most important not only to have the shop out of sight and sound of the showroom, but also have the entrance around the corner or on a back street where disabled cars coming for treatment will not be seen by prospects. The sight of one dilapidated, smoking or missing car glimpsed through the showroom window might mean the loss of a sale. It is best to take no chances.

The shop must have windows on one of its long sides, and since the exposure at the sides of the building is usually of uncertain duration, it is not well to consider it as usable window space. It is generally advisable to locate the shop along a row of windows at the front or the back.

Vulcanizing room, battery room, forge shop, tool room, etc., may be arranged at one end, care being taken, however, not to cut off the light from the main shop. It is usually desirable to place these rooms at one end, and since only one of them will then have the advantage of front or rear windows, the others must be lighted by skylights if lighted at all by daylight, which is another reason for selecting the top floor.

GARAGE UNIT

The garage unit may occupy the rest of the space as far as possible, care being taken to observe the limitations already mentioned. If a chauffeur's room is included, it is well to have this on the top floor, where ventilation and light are best, and where their presence or noise will be least objectionable.

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Two Good

Winter Business Windows

Both Are Simple and Easy to Set Up



Nothing but heaters in this window of the Auto Supply Co., New York. One excellent feature is the use of cards which show the method of applying the heater to a number of different cars. The cards also describe the heater briefly and tell the price.



Here are robes and then more robes in the window of the Times Square Auto Supply Co., New York. But they have not been put in hit or miss style. Each is carefully draped to show its texture and color. On the floor of the window there are a number of different styles of heaters. Also there are gloves and other things to keep the motorist warm.

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New 2-Ton Nash Truck at $1875

This, With 1-Ton and Quad, Will Comprise Entire Line—Standard Construction Used

THE Nash Motors Co., Kenosha, Wis., is placing on the market a new 2-ton chassis which is not radically different from its 1-ton model. The 1½-ton model will be dropped, though both the 1-ton and the Quad will be retained.

The new truck is designed along conventional standard lines and is built with special consideration for sturdiness and dependability. The engine, which is the same as that used in the 1-ton except larger, is a four-cylinder, L-head, 3¾ by 5¼ in. With a piston displacement of 231.9 cu. in., the horsepower to displacement ratio is 1 to 10.3. A Simplex, four-ball, centrifugal governor limits the engine speed to 1290 r.p.m. and the road speed to 16 m.p.h.

The cylinders are cast in a block and each piston has four rings. Valves are on the right side. Die-cast babbitt bearings are used in the crankshaft and connecting-rod bearings.

A centrifugal pump is used for cooling and in the radiator, which is of the cast tank type with removable core, provision is made to prevent slopping and waste of the cooling water. The fan is a four-blade mounted on a spring tension bracket, driven by a 1-in. flat leather belt. Lubrication is combination force feed and splash, a plunger pump being operated from an eccentric on the camshaft.

Fuel is taken through a Stromberg, Model ME, carbureter with hot air intake from a 16-gal. tank located under the seat. Delco ignition is used.

The clutch is a dry disk. The gearset, which is in a unit with the engine and of the selective type, gives a gear reduction from engine to wheels in first speed of 25.92 to 1; second, 15.187 to 1; third, 8.1 to 1; reverse, 31.42 to 1.

M & S spiral gear differential is used and drive is internal gear. The axle is tubular and somewhat different from that used in the 1-ton job. There are no torque or radius rods, drive and torque being taken through the springs.

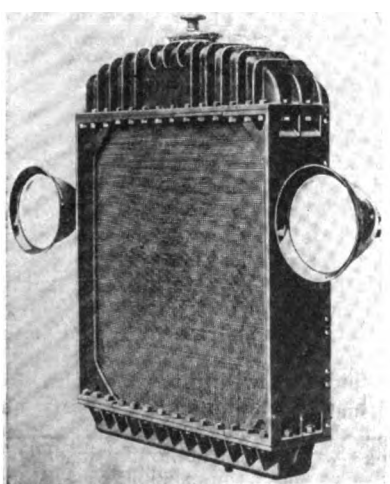
The frame is pressed channel steel, with a depth of 6 in. and a flange width of 3 in. The length of the frame over all is; Standard, 203½ in.; special, 227½ in. The width is 33½ in. in the rear and 28 in. in front. The frame is 30 in. from the ground when under full load. The standard wheelbase is 144 in., giving 120 in. back of the driver's seat, and the long wheelbase is 168 in. with 144 in. back of the driver's seat.

Service brakes are external contracting on the rear wheels and the emergency is of the same type, but located on the drive shaft. This is the same type of construction as is found on the Nash passenger cars. Thirty-four by four solid tires are fitted in front and 34 by 6, solid, pressed-on type in the rear.

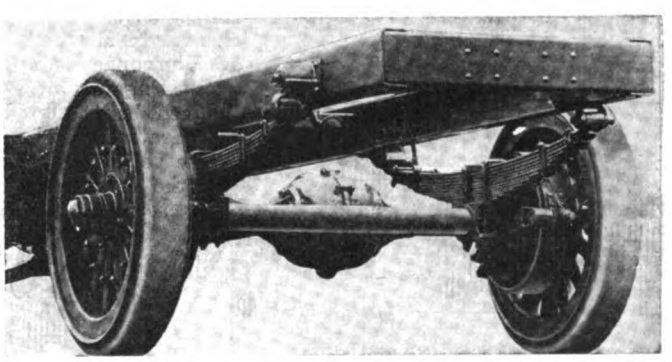
Simple and accessible take-ups and adjustments are provided for the clutch, steering connections, brakes, driving pinions, fan belt, etc. Ground clearance is 9¼ in. and all trucks are equipped with electric starting and lighting with the usual complement of tools, etc. Prices of the Nash line are: 1-ton, $1,495, 2-ton, standard chassis, $1,875, and the Quad, $3,250. The new model comes in lead finish without body at the price quoted, but if body is ordered, the body price includes painting of both the body and chassis.

Lincoln Starts Work

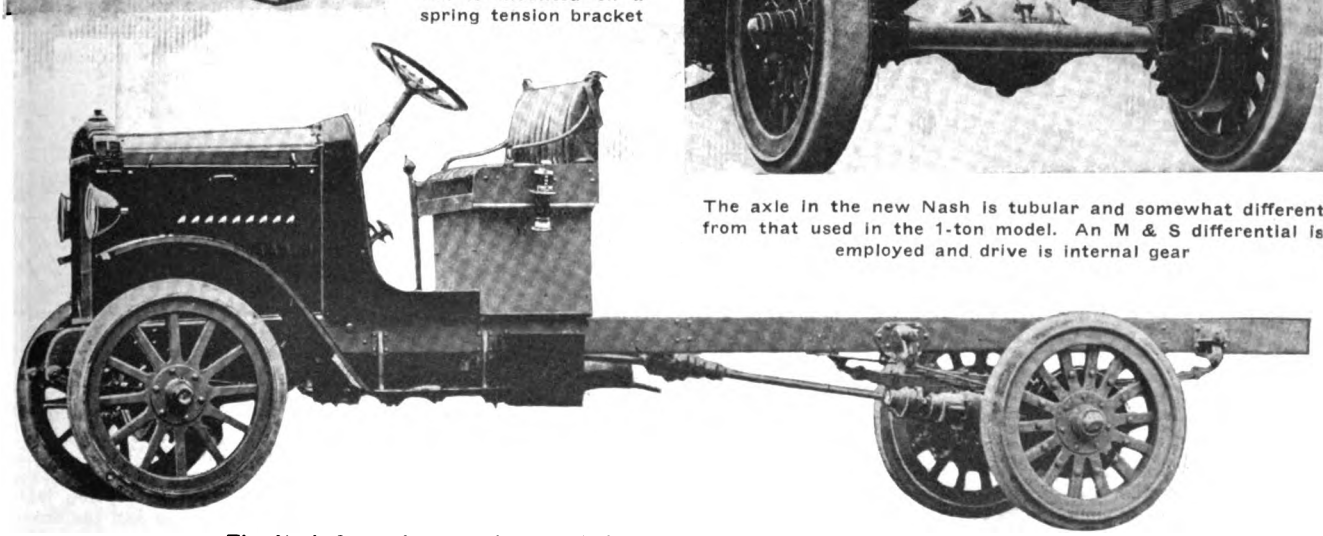
INDIANAPOLIS, IND., Oct. 6—The Lincoln Motor Co. of Anderson, Ind., which recently was organized and leased an industrial plant there, started operations last week. The company will manufacture motor trucks. R. J. Walker, of Anderson, is president; M. G. O'Brien, of Evansville, Ind., is vice-president; Ernest Bausch, of Detroit, is assistant manager, and Albert Lowman, of Anderson, is secretary.



The radiator on the new Nash 2-ton vehicle is a massive cast type with a removable core. Provision is made to prevent slopping and waste of water. The fan is mounted on a spring tension bracket



The axle in the new Nash is tubular and somewhat different from that used in the 1-ton model. An M & S differential is employed and drive is internal gear



The Nash frame is pressed steel of channel section and the standard wheelbase is 144 in.

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A Department of

BETTER MECHANICS

No. 44

Cadmium Readings Accurately Indicate Battery Condition

By S. T. Williams

HYDROMETER readings of the specific gravity of the electrolyte in a storage battery are not a positive indication of the condition of the battery. For example, the hydrometer might show a specific gravity of 1280-1300, which would indicate that the battery was fully charged. But this specific gravity reading could be brought about by simply adding clear acid to the electrolyte and increasing its specific gravity.

The cadmium reading will also show whether the trouble is with the positive or negative plates when one or more cells of a battery are low in capacity. It is used to check up the hydrometer readings when the battery is charged and to determine its internal condition.

A special voltmeter, permitting a reading of .2 volt to the left of the zero mark, and a reading of at least 2.8 volts to the right of the zero mark, is suitable for this work. This permits both positive and negative readings to be taken.

WHAT IT IS

The test points connected to the leads of the voltmeter are of the usual construction, each comprising a sharp steel rod held in a wooden handle. To the negative test point is soldered a metallic cadmium rod about 3½ in. long and ¼ in. in diameter, as shown in Fig. 1. This can be purchased in nearly any druggist's supply store. It is this cadmium rod that is dipped into the electrolyte.

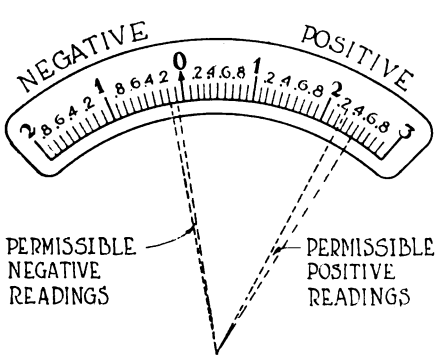


Fig. 3—Voltmeter scale, showing permissible positive and negative readings

METHOD OF TAKING READINGS

Cadmium readings are taken while the battery is *on charge at the normal charging rate.* First the voltage of each cell is taken, using the sharp copper test points. On a fully charged battery this should be from 2.45 to 2.65 volts. Then the cadmium rod is immersed in the electrolyte above the plates of one cell, and the copper point of the other test rod pressed against first the positive post of the cell being tested and then against the negative post. See Fig. 2.

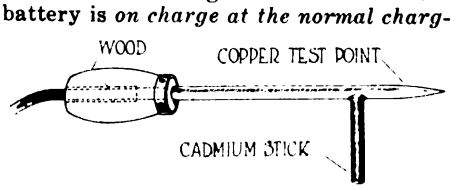


Fig. 1—The cadmium stick is attached to one of the test points and is inserted in the electrolyte

The voltage between the positive post and the cadmium should be from 2.35 volts to 2.5 volts. That between the negative post and the cadmium should be between minus 0.1 to minus 0.2 volt. The minus readings are those on the left side of the zero mark on the voltmeter, and the positive readings are those on the right side of the zero mark, as shown in Fig. 3.

If the negative reading approaches or goes to the right of the zero mark, defective negative plates are indicated. The lower the reading obtained for the negative plates the better is the condition of the negative plates.

If the reading of the voltmeter between the positive plates and the cadmium is less than 2.35 volts, and the negative readings are within the limits, decreased capacity of the positive plates is indicated. This may be due to sulphated plates, to a slight leak between the plates, to natural wear, or to undercharging. In this case it is desirable to discharge the battery at the normal rate, and again charge it.

The table herewith gives the voltmeter and cadmium readings on a battery being charged at the normal rate. The readings were taken at hourly intervals, and the readings on a healthy battery

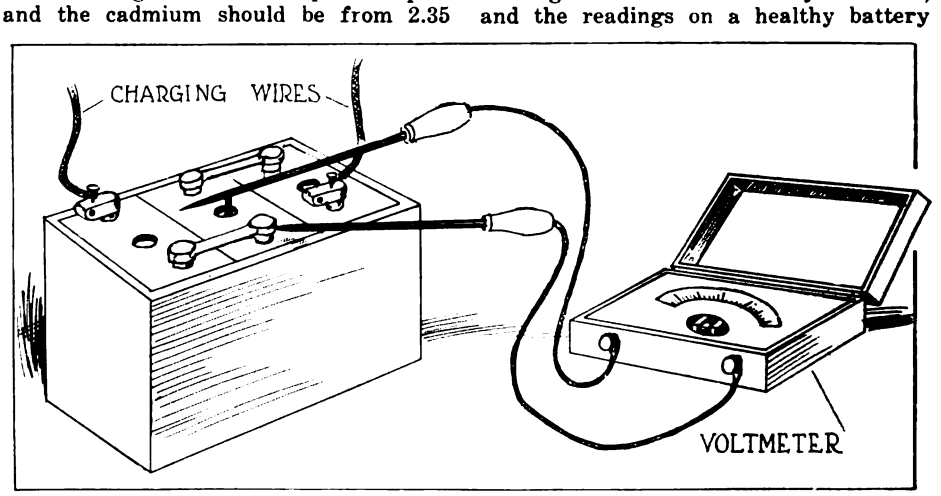


Fig. 2—Complete apparatus, showing battery on charge with center cell undergoing test. The cadmium rod on one of the test points is submerged in the electrolyte and the other point is in contact with one of the cell terminals

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should not depart widely from these. It will be noted that the voltmeter reading across the poles of each cell is equal to the difference between the reading between the positive pole and the cadmium, and the reading between the negative pole and the cadmium, until the end of the seventh hour on charge. After that the readings across the battery poles are equal to the two cadmium readings.

Hours on charge	Reading across cell volts	Reading positive pole to cadmium volts	Reading negative pole to cadmium volts
0	2.10	2.25	—.15
1	2.17	2.27	—.10
2	2.19	2.28	—.09
3	2.21	2.29	—.08
4	2.23	2.31	—.08
5	2.24	2.32	—.08
6	2.25	2.33	—.08
7	2.30	2.35	—.05
8	2.48	2.43	+.05
9	2.60	2.50	+.10

How to Focus and Adjust Headlights

Method Used by the Liberty Motor Car Co., Detroit

A HINGED cross-arm carries a black canvas screen that is tacked to a wooden framework. This screen may be dropped down in front of the car, when in use, or swung up out of the way when not in use.

Parallel to this screen, and 15 ft. in front of it, is a wide mark on the floor, which locates the front wheels of the car.

The first adjustment is to bring the lights to focus by setting the bulbs. When right, the lights will focus a clean bright circle on the screen, and this position is easily determined by shifting the position of the bulb until the best possible illumination is obtained.

Next the lights must be set to throw the light onto the road. According to the New York State law the lights must not shine over 42 in. above the road at a distance of 75 ft. in front of the car. This condition practically eliminates glare. To bring this about the brackets must be bent, and the bending iron shown in Fig. 5 is well suited for this work.

The distance from the floor to the top of the headlights is measured, as shown in Fig. 2. If this is more than 42 in. the lamp must be bent downward so that the top of the circles thrown onto the screen are slightly more than 42 in. from the floor. If the top of the headlights is less than 42 in. from the floor, the tops of the circles on the screen should be less than 42 in. from the floor, and the rays may slant slightly upward. And when the top of the lamps is at exactly 42 in. from the floor the rays may go forth parallel and strike the screen at 42 in. from the floor. These three conditions are shown in Figs. 2, 3 and 4.

The headlights should now be bent so that they "toe in" slightly, so as to concentrate the lights on the center of the road directly in front of the car.

If many sets of headlights are being adjusted on cars of the same model, the work will be still further facilitated by marking chalk circles on the screen denoting the proper setting. Then when the car is placed on the marks the lamps may be quickly brought to that setting.

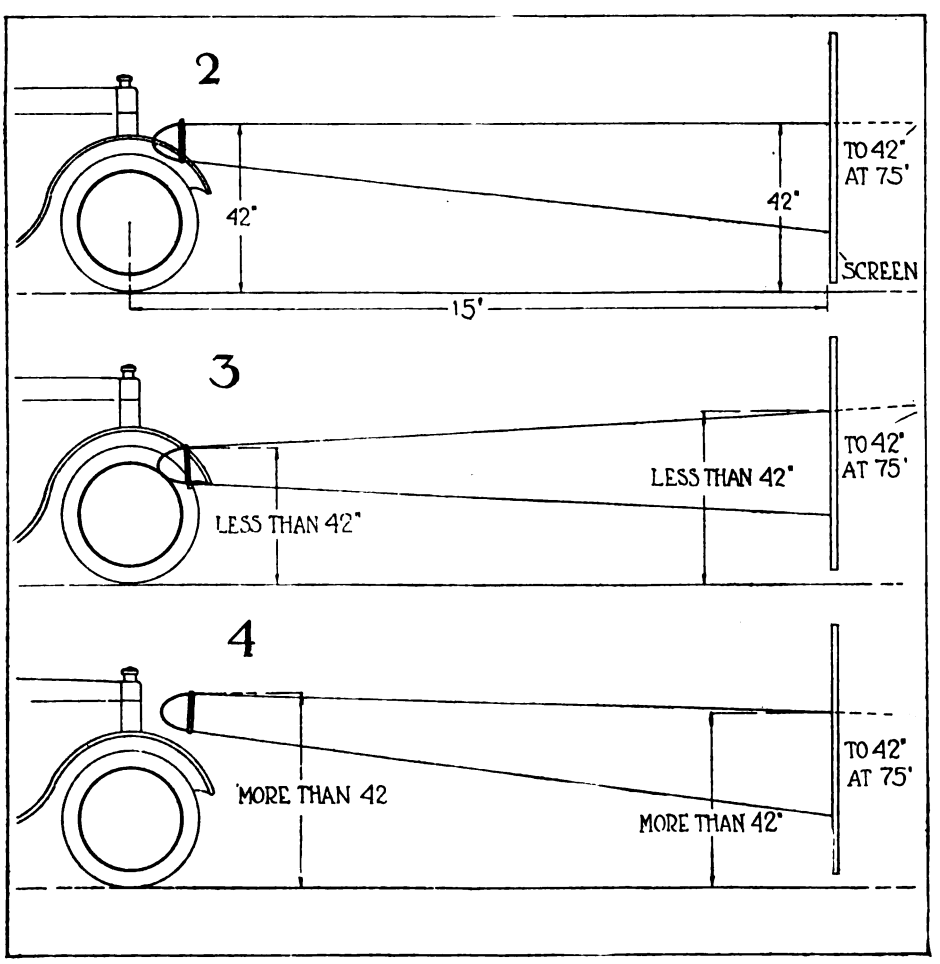


Fig. 1—Right—Apparatus for focusing headlights at 15 ft. Figs, 2, 3 and 4—Above—Showing headlights deflected so that upper rays are 42 in. from the ground, and also greater and less than 42 in.

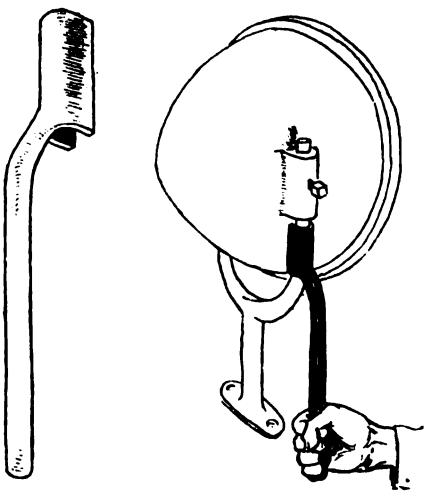
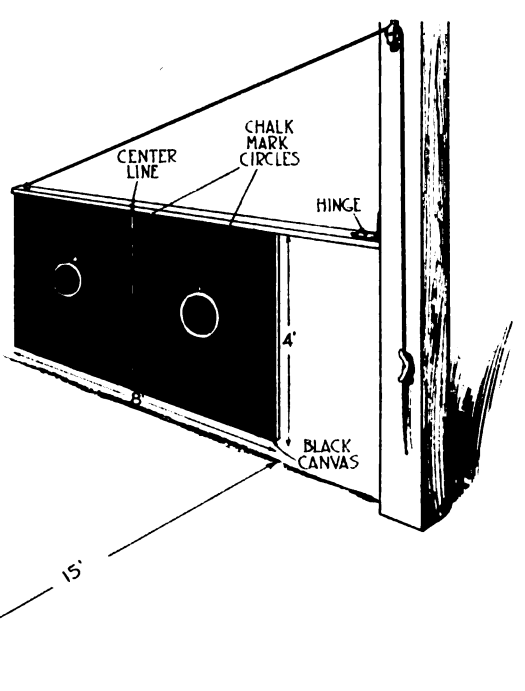


Fig. 5—Tool for bending the headlights so that the rays will be thrown down on the road



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Queries Answered

WE SHALL BE GLAD TO FURNISH INFORMATION to anyone free of charge, but be careful to give all the facts. Inquiries are answered by mail whether they are published or not, so do not fail to enclose a stamp and your correct name and address.

Finding Garage Location

Editor Motor World: I am a reader of your valuable paper, and as you seem to be able to answer most any question, I thought you might answer mine. I intend to open a garage in some town south of here in the near future, and thought possibly your road man could give me the name of some town where they need a good up-to-date garage.—J. J. Payne, 1211 Florida Avenue, N. E., Washington, D. C.

We are not sufficiently familiar with the situation in the southern towns to give you the best advice as to where to locate a garage, but there are men who are thoroughly familiar with this territory and who will gladly give you all the help you need. We refer to jobbers' representatives traveling in that territory. We are enclosing a copy of our jobbers' list so that you may pick out the jobbers who operate in the South, and by writing to them you will find out that they will be very glad to give you any aid in obtaining the location which you may require.

These men probably will give you the names of several towns, and it would be worth your while before making a final selection to visit the various towns to study the situation. The town most desirable is not necessarily the one with the fewest garages but the one with the poorest garages.

One town may have only two garages where five or six may be expected, yet one of these garages might be so well managed that it might have 75 per cent of the trade. Possessing all the advantages of an up-to-date establishment, even though you operated your business according to the most approved methods, you might not have more to offer than this competitor.

Another town might have more garages than it could really support, yet it might be a better field for your start. If there was no garage in town which was particularly live or up-to-date, your entrance there with aggressive and progressive methods would quickly gain trade for you.

Success Requires Experience

Editor Motor World: I am thinking of going in business with a partner around the first of the year. Could you give me any pointers on when and how to start the business, some names of men who would like to give me a few points? I am a machinist with some automobile knowledge, and would like to get the business end with this, and I think I could start out around the first of the year. I think the used car would be the thing I would like to try.—Donald Miller, New York, N. Y.

The rules for successfully conducting a used-car business are simple enough, as is the case for any other business. The proposition is simply to buy cars and sell them at a profit. This requires rare judgment in appraising the value of a car which is purchased and skillful salesmanship in disposing of the car at a profit. There is a small possibility that you could make a success of this business without any further knowledge or training than you have now, but we think that you would be very foolish to attempt it. We should not advise you to go into any branch of any business without an adequate knowledge of that business. It would be much better for you to learn so much that there will be little or no chance of your failing than to risk your money with almost certain chance of failure. If you fail now, you may never have capital to try again.

We would suggest that you get a job with some good live, reliable used-car dealer. Study the methods he uses in buying and selling and repairing cars. Take notes on what he does because many things that happen you will not remember and yet they are too valuable to forget. Go at it the same as you would if you were going to college. Study every detail of the business and watch for places where you can make improvements. Until you become a valuable employee to this dealer you are not fitted to embark in the used-car business.

MOTORISTS MEMORY JOGGER

THE EAGLE GARAGE
1134 MAIN STREET, AKRON, PA.

ACCESSORIES ✱ REPAIRS ✱ OPEN ALL NIGHT ✱ TELEPHONE 71 NORTH

(OVER)

Please Keep This Card for Reference

I—GENERAL

Tires
Tubes
Tire valves
Dust caps
Tire valve caps
Soapstone
Patches
Rubber cement
Vulcanizer
Chains
Tire gage
Foot pump
Engine-driven pump
Blowout patches
Electric bulbs
Fuses
New headlight glasses
Spotlight
Electric horn
Hydrometer syringe
Storage battery
Trouble lamp
Cigar lighter

II—FOR THE PRIVATE GARAGE

Cylinder oil in cans or barrels
Transmission oil and grease
Large can of graphite
Large can of soapstone
Water pails
Sponges, 2
Chamois, 2
Cloths for polishing glass
Washing soap
Metal polish
Glass polish
Hand soap
Towels
Rubber boots
Jumpers
Overalls
Brushes for cleaning wire wheels, etc.
Brushes for upholstery
Hot water heater
Kerosene
Washing soda for cleaning metal
Spraying device for cleaning engine
Pail for cleaning parts
Whitewash for tires
Enamel for touching up scratches
Body polish
Valve grinding tools
Portable tube vulcanizer
Emery paper
Rust proof paint for rims, etc.

III—SUPPLIES FOR THE TOURIST

Water bucket Dusters
Goggles Caps Gloves

As the name implies, this card is to aid the memory of the accessory customer

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How Would You Solve This Puzzle?

YOU have in your used car stock a number of cars that originally listed between $1,000 and $1,500. You have traded them in at such a price that you must get $700 and $800 out of them or you lose money. People drop in every day and ask for small, cheap, used cars, but you have none. You sell all you can get. How are you going to keep those big $700 and $800 used cars from becoming a loss, a burden on your business?

Here Is How the Puzzle Was Solved

By Guy W. Ellis

Sales Manager for the L. J. Robinson Co., which sells the Chalmers in Detroit.

1—He set out scientifically to determine the nature of the requests coming into the used car department.

2—He found he could sell all the small used cars he could get.

3—He determined to dispose of his big used cars for small cars plus money.

4—He ran advertising in the newspapers on the plan shown on this page, advertising to small-car owners that they could have big cars if they would only drop in at the Robinson used car department and look over some of the used cars on hand.

5—The big used cars were sold for cash plus a small car.

6—The small cars were quickly sold at prices which netted the dealer the price—or more than he had placed upon his big used cars and which he did not seem able to get.

7—This businesslike analysis of this sales problem solved the situation. On this page are shown several sample double-trades and some of the advertisements used.

FORD TOURING CARS

We have an order for one dozen Ford touring cars which we must fill immediately. To get these cars we are willing to offer good prices in exchange for used cars of better makes. We'll take in your Ford on a Dodge, an Overland, a Chalmers or any other used car in our stock. See us at once, for we must have these Fords immediately.

L. J. ROBINSON CO.,
Woodward at Edmund.

Some of the Double Trades

Chalmers cab; list price, $1,450; wire wheels.
Sold for $1,400—$600 cash and used cab at $850.
Spent $75 on cab and sold it for $900.

Chalmers 6-30, marked at $700.
Sold for two Ford sedans and $100.
Sold Fords in 24 hours, one for $350, other for $275.
$700 car therefore brought $725.

Chalmers 6-30, marked at $750.
Sold for $350 and a Ford.
Sold Ford quickly for $400.
$750 car brought the full $750.

Chalmers 6-30, marked at $700.
Sold for $300 and a Ford.
Sold Ford for $400.
$700 car brought full $700.

Chalmers 6-30, marked at $750.
Sold for $475 and a Ford.
Sold Ford for $270.
$750 car brought $750.

Chalmers 6-30, marked $750.
Sold Ford for $275.
Sold Paige for $600.
$750 car brought $825.

Seven-passenger Chalmers, held at $1,050.
Sold for Paige roadster and $750.
Sold Paige in few hours for $300.
$1,050 car brought $1,050.

TRADE YOUR DODGE

in on a 1916 six-cylinder Chalmers. See us. We'll trade with you on the right basis. This Chalmers is a beautiful car, overhauled, rebuilt and repainted. Tell us about your Dodge; we can get together.

L. J. ROBINSON CO.,
Woodward at Edmund.

Big Show in Denver

DENVER, Oct. 8—Forty-five gas and electric car dealers and 33 accessory dealers have taken space for the November show of the Automobile Trades Association Nov. 12 to 18. This entirely disposes of the total 20,000 square feet. During show week a special display of trucks will be held in the salesrooms of dealers. The show is catering to the entire Rocky Mountain district and it is anticipated that there will be a large attendance from the surrounding territory. At the same time there will be a State trade convention. Reduced rates on the railroads have been secured. The show is being managed by George A. Wahlgren, who also manages the San Francisco show. Denver had no regular manager and secured the services of Mr. Wahlgren through co-operation with the National Association of Automobile Show Managers.

220,770 Cars in Michigan

LANSING, MICH., Oct. 5—The licensed motor vehicles in the State of Michigan on Oct. 1 amounted to 220,770 or 60,000 more than for the entire year of 1916.

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Editorial Observation

Give Yourself a Jolt

HOW seriously do you regard yourself as a part of the battle that was fought last week in Flanders?

Did you have anything to do with it?

Are you having anything to do with the war at all, or do you imagine that you are just an innocent bystander who isn't going to have to do anything except live and work and eat the rest of your life?

Quit kidding yourself.

Give yourself a jolt!

We don't know how you're going to administer this jolt to yourself, but if you don't administer it soon yourself it's going to be handed to you rather roughly later on.

In some way or other you must wake up to a realization of the fact that you have just as much to do in this war as any man with a gun. You have more to do, for if you don't do your part the man with the gun can't do anything except quit. Then he'll get a nice little wooden two-by-four for a monument, and who'll be to blame? Will it be you?

When Herbert Hoover says that sugar is needed in France, and that it is up to every citizen of our Republic to save on sugar so that we may supply France, what do you do? Do you keep right on dumping two, three or four lumps into your coffee every morning, or do you cut it down to a minimum, cut it down until the coffee is almost too bitter to drink?

And when Hoover says we must eat more corn and other things and save the wheat, what do you do? Do you eat just as much wheat bread as ever, or do you cut out some of it? Do you have any breadless days in your family? Or are the breadless days all in France?

And when there is a cry for beef for the fighting men in the trenches, and a plea that we stay-at-homes have beefless days and save the red meat for the men who carry guns in mud and iron rain and amid death, what do you do? Do you keep right on eating thick, juicy steaks, or do you switch to some other meat for a change, and let Europe and our fighting men get what they need?

And when the government says it must have money, and floats a Liberty Loan, what do you do? Do you sit back and say: "Oh, somebody'll buy 'em," or do you skip down to the bank the first chance you get and ship a hatful of bullets to the kaiser?

It isn't what we think that counts. It's what we do.

And now get this:

We are fighting so that kings and emperors may not ride on the necks of peoples. We are out to make the world safe for democracy. But is democracy worth fighting for?

The difference between an autocracy and a democracy is that in the one the ruler is the master of the people and in the other the people are the rulers and their leader is their hired man. The source of power, initiative and government is the people. And that means YOU.

Germany has demonstrated what autocracy can do. The word of a few has developed the height of efficiency in the people. They are exerting every energy. Why? Because they must. Not because they want to.

It is now for America to demonstrate that Democracy is not less efficient. We must show the world that a republic is capable of doing things better than any king-bossed country that ever existed. And that can be done only when YOU and the rest of the hundred million Americans take your part in our great war.

YOUR part is to do the things you CAN do—save wheat, save meat, save sugar, buy bonds, and everything else that is necessary. It isn't that you CAN'T do these things, but that you DON'T do them as fully as you might. Each one of us must be like a messenger boy who does one thing the best he can and then stands waiting to see what he must do next. And then he does that next thing and waits for another.

To reach this state of mind may require a jolt of some kind. If a German submarine flipped a few shells over into some of our seacoast cities we would all be jolted—badly. And we'd respond much more quickly to these appeals for help that come from the men whom we have selected to manage our war affairs.

But why wait for such a jolt?

Must you wait until the mad dog bites you before you begin to throw rocks at him?

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What Others Think

THIS page is for the use of MOTOR WORLD readers with something to say. Letters on subjects of interest to dealers, garagemen, repairmen and jobbers are always welcome—especially if they are timely and brief.—THE EDITOR.

This Letter

Came to a Dealer

Dear Sir: I drop you these few lines to let you know there is a man in your territory thinking of buying a good automobile, and, of course, it would be to your interest to look him up. He did not tell me so himself, but I heard it from pretty straight quarters, so I thought I would let you know about it. You are a good friend of mine and he is a better one, so I wish you both success. Call on him at once and probably you can make a sale on some terms or other. I will now tell you the name of the man and he is just the man to have a good Ford. He has a large family and has been pulling them around in a little one-horse old surrey, too much for any horse. The man is ——, west of town, and a better, honest man is not going than he, so call on him and do your best, and I will be glad for your sake and also his. I am your friend, but I won't sign my name now.

Standard Service Charges

Editor Motor World: We are inclosing copy of letter to the Tampa Auto Dealers Association, Tampa, Fla., by our Mr. Harry G. Wedler, together with draft of the uniform invoice form which he originated.

A great many cars are now being laid up and repairs ordered. Many hundreds of dealers are still puzzled as to the best system to adopt to insure satisfaction to the customer and sufficient profit for themselves. The uniform invoice form will help to solve this problem for any dealer who is not already equipped with an adequate system.—Emil Grossman Mfg. Corp., M. Schwarz, Brooklyn.

Tampa Auto Dealers Assn.,
Tampa, Florida.

Gentlemen:

The trend of the trade to-day everywhere is "What to do with the free service nuisance," which, unless speedily dealt with and with serious consideration, will be relatively as serious to you as the boll weevil is to the cotton grower.

This condition of free service can successfully be overcome by harmonious, concerted action among your associate members, and by being truthful to each other.

After conferring with your president, I submit a suggestion for a universal form of invoice recommended to be adopted by each and every dealer member, and even non-member if he choose to use it. On this invoice, as you will see, is itemized shop and garage service in all its branches, with the uniform association prices of each kind of service.

The purpose of a universal form of invoice is threefold: First, it tends to assure accuracy in your billing department. The billing clerk need only insert the number of hours, days, or weeks, and multiply them by the service rate printed on the form. Secondly, it instills confidence in the customer when he can see that he is being charged according to schedule for the class of service actually rendered, and no matter in how many shops or garages he has work or service rendered, the invoice of all will be uniform in price schedule. Think how impressive that will be and the number of arguments it will save.

The third good cause for uniform invoices and price schedule maintained is that it takes the cut price question out of competition and puts it on a basis of workmanship, courtesy and personality. And, when these qualifications make for the competition between all dealers, it will develop better, keener, more successful and accurate business men of all. It will put your business on a higher plane and assure you sure profits, and I believe that is what all of you are after.

No fear of this interfering with any trade laws, as you can see similar forms used by laundry companies, etc.—HARRY G. WEDLER, representing Emil Grossman Mfg. Co.

Pass the Tax Along

Editor Motor World: You wired me this morning with regard to the war revenue bill and I immediately answered as follows:

"Will charge consumer as direct war tax,"

which I now confirm.

As the war revenue bill did not lessen the cost to the manufacturer or did not change the discounts which the distributer and dealers obtain from the manufacturers and as the prices now existing were based on the cost of production and the cost of selling we feel here that the ultimate purchaser should be the one to be affected by the war tax.—W. W. Barnett, Denver.

Liked War Tax Articles

Editor Motor World: Congratulations on your "War Tax" article in the last issue of Motor World.

"Them's the sentiments," and we cannot see where there should be any trouble on the part of dealers in collecting this tax.—E. V. Stratton Motors Co., Inc., E. V. Stratton, Albany.

Oregon Fair Show Draws

SALEM, ORE., Oct. 12—The annual automobile exhibit at the Salem State Fair attracted large crowds from all parts of the State, and the Oregon dealers who displayed were gratified with the results both direct and indirect. A large number of tractors were displayed at various points.

Duluth Dealers Organize

DULUTH, Oct. 13—The Automobile Trade Association has been reorganized with 30 members. It will have a paid secretary and will manage the annual automobile show.

FIRM NAME

SOLD TO .....

.....

.....

SHOP SERVICE HOUR RATE

Date				Total
.....Hours	Shop Foreman	Per Hour		$1.00
..... "	Master Mechanic ...	"	"	1.00
..... "	Master Electrician ..	"	"	1.00
..... "	Machine Work	"	"	1.00
..... "	Mechanic's Work	"	"	.75
	Greasing car, (mi'm)	"	"	.50
	Oiling car, (mi'mum)	"	"	.50
.....Miles	Towing car	Per Mile		
.....Weeks	Storage on size .. car.	"	week	1.50
.....	" " " .. " .	"	"	2.00
.....Days	Rental service on storage battery ($1.00) plus	Per day		.25
.....	Special			.
.....Tires Changed	.....	Each		.25

Following necessary new parts were applied:

.....

.....

.....

This is the form suggested by H. G. Wedler

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The RETAIL NEWS

EAST

Service Tire Co. has opened salesrooms at 1336 Fourteenth Street N. W., Washington, D. C. It is doing a general tire and accessory business, handling all standard makes of tires, tubes and accessories. The business is under the management of G. W. Rundlett, who has been connected with the automobile tire and accessory business for the past five years.

Dell's Garage, 266 Wethersfield Avenue, Hartford, Conn., is making an addition, 60 x 40, to the main building, which will raise it another story. Another addition is being made south of the garage and will be used as a truck repair department. This is to be 60 x 60.

Elmer Automobile Co., Hartford, Conn., has taken over the retail sales of the Smith-Form-A-Truck, formerly handled by George H. Gabb, who retains the wholesale rights. The Elmer Automobile Co. has opened another Ford branch in Putnam.

Bogota Auto Service Co., Bogota, N. J., has opened a garage at No. 4 Fort Lee Road. It is opposite the Lake Shore station.

MIDDLE WEST

Lingelbach Motor Co., Oconto, Wis., has established a tire and accessory store, gasoline and oil station in the building opposite its garage and repairshop on Main Street. A feature of the new store is the $5,000 stock of Goodyear, Kelly-Springfield, Racine, Firestone and Pennsylvania tires. The company will specialize in Ford accessories and Stewart products.

Conklin Garage, Coopersville, Mich., has been bought by Edward Harris. Earl Thurston, the former owner, is going to move to Cedar Springs and will have the agency for Ford.

Burke B. Bowes, Lyons, Mich., will erect a Ford sales and service station in Portland, Mich., to cost between $7,000 and $8,000.

Jarvis Chamberlin, St. Clair, Mich., has opened a vulcanizing shop.

Michigan Auto Sales Co. of Detroit has opened a branch salesroom in Battle Creek, Mich., at 195 West Main Street. The store, under the management of Harry Kohn and F. B. Ensley, both of Detroit, will handle used cars exclusively.

Universal Auto Accessories Syndicate, Grand Rapids, Mich., has been organized by T. H. Vandermey and C. A. Lamoreaux.

Michigan Auto Co., Calumet, Mich., sustained a loss of $1,000 when its garage and repair plant were damaged by fire. Repairs will be made at once and business will not be interfered with in any way. The firm has plans for a modern concrete garage building.

Olson & Pauly Auto Co., Milwaukee, state distributer of the Ross, has moved from 441 Jackson Street to its new four-story salesroom, garage and service building at 415-417 Marshall Street. The new building and equipment represent an investment of $50,000.

Chandler Sales Co., Green Bay, Wis., has purchased the Larson Garage, recently established, and is moving its salesroom and service station from 213 North Broadway to the new location. Edwin Mauer is general manager.

Palmer & Judevine, Baraboo, Wis., have disposed of their garage and repairshop business to Dr. J. F. Sneathen.

New Garages

B. & O. Service Garage.....Detroit
Stebbins & Wespinter (100 x 130), Hastings, Mich.
National Specialty Co. Garage, Grand Rapids, Mich.
Bay City ($3,500).....Bay City, Mich.
J. C. Kunitz & Son (40 x 75)..Appleton, Wis.
Marshfield Hardware & Auto Co. (50 x 120), Stratford, Wis.
South Side Investment Co.....Milwaukee
John I. Suminski.....Milwaukee
Hugo A. Masuhr.....Milwaukee
H. W. Boelz.....Milwaukee
Square Deal Garage Co.....Toledo
Service Auto Storage Co.....Cleveland
Jordan-Ohio Co.....Cleveland

SOUTHWEST

Firestone Tire Service Co., Dallas, has moved into its new building, 2015 Main Street.

Chillicothe Vulcanizing Co., Chillicothe, Mo., is moving into the Tanner Building on North Locust Street. The building has been remodeled.

Emmett E. Trader, La Monte, Mo., has sold the La Monte Garage equipment to C. R. Urie, of Sweet Springs, who is now in charge of the business.

John Jones, Smith Center, Kan., has purchased the J. A. Smith Garage.

Olathe Auto Co., Olathe, Kan., has enlarged its garage, made necessary by the rapid growth of its business in the past two or three years.

Jos. Williford, Ardmore, Okla., has purchased the Cathay & Mead Garage.

Security Motor Co., Oklahoma City, is now occupying a four-story building as salesrooms and service station.

Shelton Tyer, Ardmore, Okla., has purchased the Moss Patterson Motor Co.

Rude Bros and the Bee De Monbrun of Enid, Okla., have taken the agency for the Kissel automobile, and will operate from the Rude Bros. Garage.

E. V. & J. B. Williams, Waurika, Okla., have purchased the interests of J. S. Sewell in the Totalk Garage.

J. H. Gwin, McAlester, Okla., is the successor to the Richard Crutcher Auto Sales Co., and will deal in automobiles and accessories.

Yandell & Fuller Automobile Co., Heavener, Okla., has purchased the business of the Bushow & Fuller Automobile Co.

Reid Carpenter, Harrisonville, Mo., owner of the Public Garage, now has the agency for the Chevrolet motor car.

Walker & Shaft, Mountain Grove, Mo., have purchased the Anderson-Payne Garage.

J. O. Salmon, Charleston, Mo., has purchased the business of the Overland Automobile Sales Co., succeeding Davidson & Salmon.

Joplin Supply Co., Carthage, Mo., is remodeling its building.

E. J. Keisling, Richmond, Mo., has purchased the David W. Farmer Garage, including all its equipment.

Martin Beals, King City, Mo., has sold his interest in the Beals & Walton Auto Co. to his partner, John W. Walton. The business will be continued under the name of the Walton Auto Co.

Oscar Eberhardt, Clarksburg, Mo., recently sold his garage to Hunter & Karr.

A. D. Sory and L. W. Carroll of the Rio Grande Buick Co., Laredo, Tex., have contracted with J. A. Ortiz for the erection of a garage, salesroom and storeroom, where they will display their cars and carry accessories.

Livingston Auto Repair Shop, Livingston, Tex., was recently damaged by fire. M. S. Cayton is the proprietor.

Holley & LaBounty and the Valliant Garage, Lampasas, Tex., have consolidated, and in the future will be known as the Pioneer Auto Co. The following comprise the firm: W. E. La Bounty, J. L. Valliant and J. R. Holley.

Watkins Automobile Co., Llano, Tex., is having new machinery installed in its garage. Lester C. Moore, an expert Ford man, will be foreman of the shop.

Murphy Garage, Brady, Tex., is now located in a new fireproof building.

Charles Crowell, Wichita Falls, Tex., has purchased an interest in the Firestone Tire & Supply Co. Roy Brundage is the other member of the firm.

Brittson-Goodale Co., Dallas, will hereafter be known as the W. F. Brittson Motor Co., with offices at 2101 Commerce Street. W. F. Brittson is at the head of the concern.

Lewis Conner, Kaufman, Tex., recently sold his interest in the Kauffman Garage to his partners, Messrs. Smith and Jackson.

Bartlett Garage, Bartlett, Tex., is remodeling and enlarging its garage.

John Brandt, Lenora, Kan., has leased the W. B. Jarvis vulcanizing shop.

J. P. Klamm, Ottawa, Kan., has opened an automobile repairshop in the Fisher Building. He will handle accessories and specialize in electric wiring for cars.

Clifton Garage, Clifton, Kan., has had its building remodeled and improved.

Phares Root, Independence, Kan., has purchased the garage erected by the Vincil company, and has made some changes in the interior of the building.

Olathe Auto Co., Olathe, Kan., has built an addition, 38 x 46, that will house both its machine shop and garage.

George Biddinger, Beloit, Kan., has remodeled his garage.

John Holmberg, Lindsborg, Kan., is now installed in his new quarters on Automobile Row. He has the agency for the Overland, and will cater to the repairing of automobiles. The repair department will be in charge of Warner Palmer.

Bridges & Shuler, Nickerson, Kan., have sold their stock of supplies and leased the Nickerson Garage to Ray Hettick, who has been conducting the Santa Fé Trail Garage. Mr. Hettick has moved his business to the Nickerson Garage.

George Jones, Smith Center, Kan., has purchased of Jess Smith the stock and fixtures of the Cole Garage and will continue the business at the old stand.

L. D. Gibson, Iola, Kan., has purchased the 303 Garage from R. W. Kohler of LaHarpe.

O. Worthington, Peabody, Kan., has taken over the E. R. Worthington business.

Neff Garage, Cameron, Mo., has been purchased by George S. Harris. Mr. Harris expects to install in the Neff Garage the equipment of the garage he has conducted on the east side of the park.

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L. T. Berthe and Paul Salmon, Charleston, Mo., have purchased the stock, fixtures and good will of the Dover Garage and will continue the business under the firm name of the Charleston Motor Co.

Henry Wilson, Pawnee, Okla., has bought the interest of Ed Brown in the Oklahoma Tire & Equipment Co.

Kardell Motor Car Co., St. Louis, which recently added the Dort line to the Reo cars which it has handled for a long time, has leased a one-story building to be erected according to plans drawn by the Kardell Co., architect, for a service station. The new building will be at 3140 Washington Avenue, directly across the alley from the Kardell salesrooms, and will have a 50-foot front and depth of 130 feet. The front of the building will be ornamental and the showroom space will be used as a salesroom for Reo trucks. The rest of the building will be constructed for service department convenience.

J. E. Dugan Automobile Co., Herculaneum, Mo., recently suffered a loss of $11,000 by fire.

Earl G. Grant, Jefferson City, Mo., has bought the garage of Hugo Arnold.

McFarland Garage, Butler, Mo., was recently damaged by fire.

J. L. Bumps, Versailles, Mo., has rented the garage of W. A. Covert. It will be in charge of K. J. Schreiber.

Piper Auto Co., Kings City, Mo., has bought the Jefferson Highway Garage from Beals & Walton.

Mays & Hedlund, Warrensburg, Mo., have bought the Southern Highway Garage from Carl Mather.

Walker & Shaft, Mountain Grove, Mo., have bought the Anderson-Payne Garage.

E. V. and J. B. Williams, Waurika, Okla., have bought the Totalk Garage from J. S. Sewall.

W. L. Loftin and Son, Hugo, Okla., have taken over the repair department of the Hugo Auto Exchange business.

Vencel & Selix, Garber, Okla., have bought the Grother & Semke Garage.

W. A. Hall, Madison, Neb., has bought the garage of Pemonder Bros.

Jack Bell, Fairbury, Neb., has bought the interest of Charles Juhnke in the Juhnke & Bell Garage.

Ted Boal, Texhoma, Okla., has bought the Shamrock Garage from J. L. Wilson.

H. L. Kinze, Pauls Valley, Okla., has opened a vulcanizing plant.

H. B. Granlee, Miami, Okla., has bought the Jefferson Highway Garage.

H. E. McBride, Hunter, Okla., has bought the garage and machine shop of McBride & Tangney.

Arthur N. Heaney, Enid, Okla., has bought the Enid Tire Service Station from Ralph Scott.

Bailey & Norman, Camargo, Okla., have bought the garage of H. W. Hanna.

A. Price, Frederick, Okla., has bought the Acme Battery Co. from Ray Preston.

W. J. McAnerny, Sayre, Okla., is building a 50x70 addition to his building.

J. H. Gwain, McAlester, Okla., has bought the Crutcher Auto Sales Co.

R. R. Kersey, Westmoreland, Kan., is proprietor of the Westmoreland Motor Co. The company will handle, in addition to cars, Goodyear tires, tubes and accessories.

G. E. Bechtold, Denton, Kan., has sold his garage to J. H. Curtis.

Marr Auto Supply Co., Iola, Kansas, while its new building is in course of construction, has quarters in the Ramsay store on South Jefferson Street.

Andler Auto Supply Co., Arkansas City, Kan., has opened an automobile supply house on South Summit Street.

Arnold Motor Co., Abilene, Kansas, has moved to Spruce Street, where it will have more floor space.

Charles E. Stuart, Ford, Kan., has bought the garage of Peters & Cobb. The garage will be called The Cannon Ball Trail Garage.

Welch Auto Co., Macksville, Kan., is building an addition to its quarters.

Jay Ellis, Eldorado, Kan., has opened an electrical supply shop.

Auto-Way Vulcanizing & Tire Co., Ottawa, Kan., was opened recently. A. W. Hilding is manager.

J. R. Truitt, Wilson, Kan., will open the Golden Belt Vulcanizing Shop in the Golden Belt Garage.

McCormick & Davidson, Yates Center, Kan., have bought the garage of Beine & Weide.

Gardner & Duff, Concordia, Kan., are the proprietors of the Motor Inn.

C. M. Brack, Otis, Kan., has rebuilt his garage and remodeled his office.

Frank Keifer, Harper, Kan., is remodeling his garage.

Penokee Steam Vulcanizing Shop., Hill City, Kan., was opened recently by C. O. Talley.

L. L. Shimer, Garden City, Kan., who is in the automobile repair business, will move to large quarters in the Ely Building.

J. R. Johnson, Topeka, Kan., local distributer for the Hudson and Oakland, has moved into new quarters at 526 Jackson Street In his new location he will have a large display and salesroom, back of which will be ample room for his storage and repair departments.

A. C. King, Hutchinson, Kan., will open an automobile supply house at 826 S. Main Street.

R. H. Grenter, proprietor of the Auto & Cycle Supply Co., is now located at 206-208 East Fifth Street, Junction City, Kan.

Gerald Kerr, Junction City, Kan., has moved his tire shop to the old skating rink building.

New Garages

Robert E. Freeman.....Alva, Okla.
H. H. Willenbrink.....Washington, Mo.
Bradley Bros .....Linneus, Mo.
Hopkins Motor Co.....Sulphur Springs, Tex.
W. F. Herricks.....Hico, Tex.
J. C. Robinson.....Tomball, Tex.
Hawley Motor Co.....Marshall, Tex.
J. Dennis.....Greenville, Tex.
O. N. Redenbo, "Red Ball" Service Garage, El Dorado, Kan.
W. S. Lillie.....Atwood, Kan.
Tourist Garage.....Binger, Okla.
C. Y. Brown.....Greensburg, Kan.
Brewster Bros.....Independence, Kan.
D. S. Erickson.....Osage City, Kan.
Ray Phelps.....Grainfield, Kan.
Charles Golike.....Kinsley, Kan.
M. M. Black.....Towanda, Kan.
W. A. Carrington & Son....Wellington, Kan.
Hopkins Motor Co....Sulphur Springs, Tex.
J. Dennis.....Greenville, Tex.
Carhart Motor Co.....Oklahoma City, Okla.
William Doss.....Nowata, Okla.
W. G. Ashton.....Pawhuska, Okla.
Marr Auto Co.....Iola, Kan.
Gardner & Duff.....Concordia, Kan.
White Bros.....Belton, Mo.
Barnett & Reckline (60 x 60).....Cuba, Mo.

NORTHWEST

Overland Garage, Red Wing, Minn., owned by E. Tripp, Harold Oliva and William Renshardt, has been sold to E. L. Kennedy.

Garrison Tire Repair Co., Garrison, N. D., has opened a shop.

S. M. Salmon, Spencer, S. D., will erect a building to house a salesroom and repair-shop. He will handle the Maxwell and Studebaker.

Matt Morrissey, Tecumseh, has purchased the Ambrose Mazanek Garage, Steinauer, Neb.

Nispel & Metcalf, Plymouth, Neb., has purchased the Wolf Weichel Garage.

Walter McRae, Atwater, Minn., will open a garage and shop at Buxton, N. D.

C. E. Edwards, Boulder, Mont., has bought the J. H. Budsey Garage.

Otto Bloemke, Springfield, Minn., has leased the Mueller Garage.

Schumann Bros., Winona, Minn., will open an automobile business at 209 East Third Street.

Bertha Hardware Co., Bertha, Minn., sold its machine and automobile building to the Noeske Bros. Implement Co.

John Schwarting & Bro., Guelph, N. D., bought the Anderson-Scott Garage.

Joseph Banik, Cathay, N. D., sold his interest in the Banik Bros. Garage to his brother, C. E. Banik.

Brown & Sym, Dallas, S. D., have sold their garage to R. O. Blair.

E. J. Wipf, Bridgewater, S. D., on Nov. 1 will sell his automobile business.

A. J. Miller, Canby, Minn., has purchased the business of the Canby Auto Co.

F. Price and C. H. Schletty, St. Paul, opened a repairshop and service station at 128 West Fourth Street.

A. C. Hosking, Zumbro Falls, Minn., bought the F. B. Anding Garage.

Louis Smith, Rushmore, Minn., sold his garage business and equipment to E. M. Brines and A. I. Metcalf of Sioux City, Iowa.

H. G. Rogers, Chaska, Minn., sold the Yellowstone Garage to M. Briggs of Ipswich, S. D.

Raymond and Donald Hamilton, Miles City, Mont., opened an accessory store at 22 North Seventh Street.

V. V. Davis, Chester, S. D., sold a half interest in the Chester Auto Co. to J. D. Page

Olaf B. Kingslie, Fortune, N. D., bought out his partner, R. D. Holerade, in the Fortune Garage.

McKinney-Beveridge Automobile Co., Sioux Falls, S. D., has taken over the business of the Cadillac Sales Co. It is incorporated at $75,000 by D. L. McKinney, M. E. Beveridge, Emma McKinney and Harriet A. Beveridge.

V. E. Lindholm and C. G. Lindholm, Baudette, Minn., dissolved partnership, the latter continuing.

New Garages

J. J. Klein.....Mobridge, N. D.
Dr. J. L. Atkinson (84 x 100)..Poplar, Mont.
Gerde Auto Co. ($10,000).....Minneapolis
Lew Leavitt.....Sioux Falls, S. D.
C. O. Hardwick ($30,000).....St. Paul
J. Burkland and A. D. McDougall, McVille, N. D.
F. A. Quinn (addition, 76 x 100), Augusta, Mont.
W. C. Schulz (50 x 140).....Beach, N. D.

PACIFIC COAST

W. W. Hartmon, Everett, Wash., has opened a new service and accessory station in the W. W. Robinson Motor Company Building, 2817 Rucker Avenue.

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Everett Racine Tire Co., 2822 Wetmore Avenue, Everett, Wash., has changed its name to the Everett Motor Supply Co., and will continue handling Racine tires and Goodyear cords and fabrics. The company has recently opened a service department.

Tacoma Tire Service System, Tacoma, Wash., is located in its new home at 739-41 Broadway, and will carry a complete line of new supersize cord and fabric tires and accessories.

Albert Burke of the Burke Motor Co., Everett, Wash., has purchased the exclusive Everett agency for the Simonizing station, and has opened headquarters at 2801 Colby Avenue.

Pitchford Tire Service Co., Tacoma, district distributer for the Gates Half-Sole tires and service station for the United States tires, has installed a Shaler vulcanizer with a daily capacity of 75 tires.

I. C. Armstrong, J. S. Morehead and J. E. Martin, doing business under the name of the American Vulcanizing Co., have opened a tire and vulcanizing plant at 3244 Mission Street, San Francisco.

W. J. Sweeney, operating Bill's Garage at Daly City, Cal., has secured the selling agency for the Republic and Peerless trucks.

Mitchell Mfg. Co., Balboa Building, San Francisco, has secured the distributing agencies for the Legalite Lens Corporation of Boston, the Pfau Mfg. Co. of Cincinnati, the Auburn Ignition Mfg. Co. of Auburn, N. Y., and the Stadeker Metal Specialties Co. of Chicago. The territory includes states west of the Rocky Mountains and the Hawaiian Islands.

C. P. Leroy has become sole owner of the tire shop and vulcanizing plant at 1224 Macdonald Avenue, Richmond, Cal., and the firm of LeRoy & Sutton has been dissolved.

Auto Electric Service Co., distributer of the Willard battery in Alameda County, has opened a branch at 2485 Shattuck Avenue, Berkeley, Cal., with J. J. Scheidt as manager.

Pratt & Williams have opened salesrooms at 357 Van Ness Avenue, San Francisco, and will handle the Woodward Ford transmission.

R. I. Gruenhagen and A. D. Storck have purchased the Fourth Street Garage, Richmond, Cal., and changed its name to the Standard Garage.

H. A. Sexton and C. P. Reynolds have opened a garage at 18 East Ortego Street, Santa Barbara, Cal.

The Elcamino Real Motor Car Co., 320-326 State Street, Santa Barbara, Cal., have erected a new building as an annex. This is the third addition made to the building during the past three years.

E. F. Ruse & Co. have opened a tire shop at 716 State Street, Santa Barbara, Cal., and will handle the Racine Horseshoe Tire.

Valencia Street Garage, 913 Valencia Street, Los Angeles, has been purchased by E. W. Hood.

McGilliard Garage has been opened at 1411 East First Street, Los Angeles, by G. D. McGilliard.

Harry G. Vorhauer has been appointed manager of the Crombie & Co. Garage, 807½ East First Street, Los Angeles.

Fred J. Fujioka, a well-known Japanese merchant of Los Angeles, has become sole owner of the F. & K. Garage, 309 N. San Pedro Street.

Fred E. Vincent has purchased the Boyd Street Garage, Los Angeles.

J. L. Howard has opened a top factory and repairshop at 1141 South Los Angeles Street, Los Angeles.

California Garage, Ventura, Cal., has been purchased by W. H. Stuart & Sons.

Robert Green, Oxnard, Cal., has opened salesrooms at the Oxnard Garage for the Maxwell, Velie, Hupmobile and King 8.

J. P. Muldoon has opened a vulcanizing plant at 410 A Street, Oxnard, Cal., and will operate under the name of Oxnard Vulcanizing Co.

Claude C. Needham has opened a salesroom at 427 Chestnut Street, Ventura, Cal., where he is handling the Winton Six, Premier, Liberty Six and the Dort.

Franham Bros. Motor Car Co., Spokane, Wash., has taken the agency for Miller tires.

James A. Smith, Seattle, Wash., has opened a salesroom at 514 Olive Street for the Gates half-sole tires.

Willard Storage Battery Co., Seattle, Wash., has opened a salesroom at 1524 Eleventh Avenue, succeeding the Auto Electric Equipment Co. C. H. Starr is manager.

Paige Motor Sales Co., Seattle, has changed the name to Great Western Motors, Inc., and increased the capital stock to $25,000.

Mitchell, Lewis & Staver Co., Portland, Ore., distributers of Mitchell cars, has opened a retail salesroom in the Beck Building.

American Auto Co., Tacoma, has been appointed district distributer for the Dort line. It will handle a complete stock of parts and accessories.

William Dolph, of Dolph & Jones, Kelso, Wash., has disposed of his interest in the Kelso Garage to his partner and will engage in similar business in Castle Rock.

Sunset Motor Co., Tacoma, Wash, Cadillac and Hupmobile distributers for western Washington, has leased quarters at 741-43 Broadway. William Carroll will establish a service station in the building.

A. J. Lormor, Portland, formerly in charge of road work for the Western Truck Attachment Co. of Seattle, has taken the Oregon territory as a dealer, and has opened headquarters on upper Alder Street, where a full stock of parts will be carried.

South Tacoma Auto Brokerage Co., Tacoma, Wash., is having plans prepared for enlarging and extending its garage on 5616 South Union Street at a cost of $10,000. The size of the present building, 50x112, will be doubled.

Pitchford Tire Service Co., Tacoma, district distributer for Gates half-sole tires, plans to establish a branch station in Seattle.

Fred M. Powell, Everett, distributer of Packard and Hudson cars, has taken over a large garage structure on Rucker Avenue, where he will move his headquarters.

J. B. Schabel, 1201 A Street, Tacoma, Wash., has recently taken over the agency for Saxon and Paige cars. A complete line of parts will be carried.

New Garages

Ira F. Barnett (100 x 100, $8,000), Wasco, Ore.
Baker Garage ($10,500).....Baker, Ore.
Boomer Garage ($20,000).....Wallace, Idaho
George D. Livesley (90 x 96)..Sumner, Wash.
Hamilton & Gause (50 x 250, $19,000), King City, Cal.
J. B. Schabel.....Tacoma
William Dolph (50x107)...Castle Rock, Wash.
F. H. Bardshar (80x113, $25.000).....Seattle
Erbie Hayes (75x125).....Ontario, Ore.
Goodrum Garage (addition, 27x55, $5,000) .....North Bend Ore.
W. K. Inman & Co. (50x100) ..Ilwaco, Wash.
E. P. Leonard, (100x112).....Tacoma

SOUTH

Emory Rylander, Americus, Ga., has established a new automobile business. He has opened up display rooms for Studebaker and Chevrolet cars, and will handle all kinds of accessories.

Hooks Motor Co., Americus, Ga., is remodeling the building on West Lamar Street formerly occupied by the Americus Automobile Co., and will occupy it.

Beasley Motor Co., Reidsville, Ga., whose garage building has been in course of construction for several months, will be ready to move in in two weeks. The building was erected at a cost of about $7,000.

Five Points Automobile Co., Durham, N. C., has just completed extensive additions to its repair department.

Universal Sales Company, Durham, N. C., has moved into its new home and improved its repair department. The Universal Sales Co. is agent for the Ford.

Boardman, Vogel & McCrea, St. Petersburg, Fla., have applied for a charter of incorporation, and will erect a building to house the largest automobile garage in that city. The firm was created through the purchase by George A. McCrea of a third interest in the firm of Boardman & Vogel.

Prest-O-Lite Co., Inc., has appointed the following new representatives:

Alt's Battery Station, South Main Street, Celina, Ohio.
Auto Service Station, Hawarden, Iowa.
Burlington Highway Garage, Wray, Col.
The Electric Machine Co., 306 East Second Street, Tulsa, Okla.
W. J. Farrell, 116 N. Central Avenue, Parsons, Kan.
Miami Machine Co., Piqua, Ohio.
Penobscot Motor Car Co., 154 Exchange Street, Bangor, Me.
Hay Brothers, 201-203 North Chestnut Street, Kewanee, Ill.
Mahlan H. Meyers, Walnut and Conemaugh Streets, Johnstown, Pa.
Way Brothers, 29 South Third Street, Easton, Pa.
Auburn Vulcanizing & Storage Battery Co., 18 Clark Street, Auburn, N. Y.
D. B. Cottey Auto Co., Stuttgart, Ark.
James A. Bates, 188 115th Street, Harvey, Ill.

Philadelphia Storage Battery Co. has appointed the following representatives:

Garrett's Garage, 9-11 North Brevard Street, Charlotte, N. C.
Lowell Motor Mart, Lowell, Mass.
Burrow Motor Co., Johnson City, Tenn.
Alexander-Seewald Co., 35 North Pryor Street, Atlanta, Ga.
F. R. Londorme, 250 Stewart Avenue, Atlanta, Ga.
L. Bennett, Orangeburg, S. C.
Central Auto Co., Columbia, Tenn.
Pawtucket Battery Service Co., Broadway and Maiden Lane, Pawtucket, R. I.
Frankfort Pattery Service Co., 356 E. Washington St., Frankfort, Ind.
Glenn Garage, Jackson, Tenn.

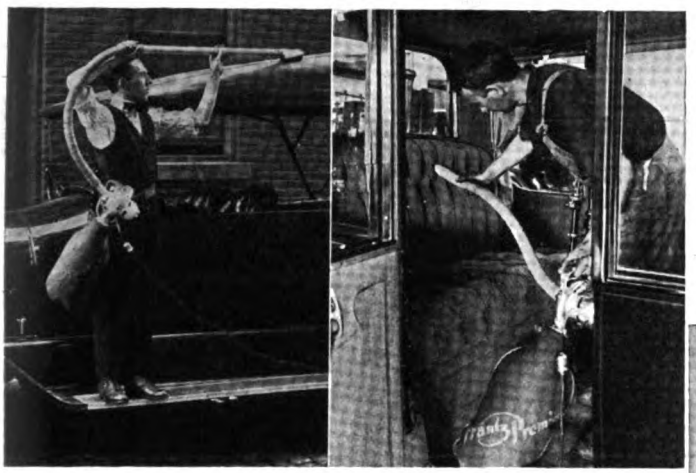
8986 Overlands in September

TOLEDO, Oct. 4—The Willys-Overland, Inc., shipped 8986 cars during the month of September. In the same period it received orders at the factory for 6458 cars while dealers sold 7928 cars at retail.

During the ten weeks of the Willys' sales congress contest which closed August 22, there were 47,212 Willys-Knight and Overland cars sold at a retail value of $39,237,250 making a new record for Willys-Overland sales. For ten weeks the Willys-Overland products were sold at an average of 4721 cars each week and 783 cars per day.

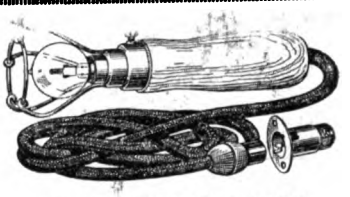
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Accessories



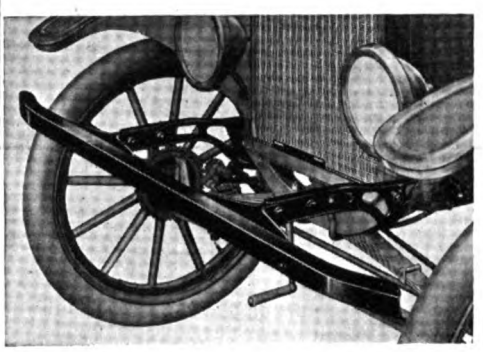
FRANTZ PORTABLE VACUUM CLEANER

A light, simple vacuum cleaner electrically operated which is carried by a stout belt around the operator's waist. It is ideal for cleaning tops or upholstery, goods in the accessory store, or floors, walls and ceiling in any part of the establishment. It weighs only 7½ lbs. Price $35. —Frantz Premier Co., Cleveland.



VESTA TROUBLE LAMP

This trouble lamp has been made specially to conform to the United States army truck specifications. It consists of an electric light bulb attached to a wooden handle, the bulb being protected by a wire guard. The lamp complete comprises 10 ft. of cord, bulb and socket for attachment to the car. Price, each, $3.50. —Vesta Accumulator Co., Chicago.





WOODS STARTER FOR FORDS

A manual starter operated by the pull of a handle on the dash, which operates a lever on the front end of the engine turning the engine over. A primer operated from the seat is also part of the equipment. Price $16. —American Steel Supply Syndicate, 726 Penobscot Bldg., Detroit.

STEWART AUTO-GUARD FOR FORDS

It combines all of the good features of the regular model, but is furnished with special bracket which makes it possible for dealers to install it in a few minutes. There is no cutting of metal or drilling of holes.

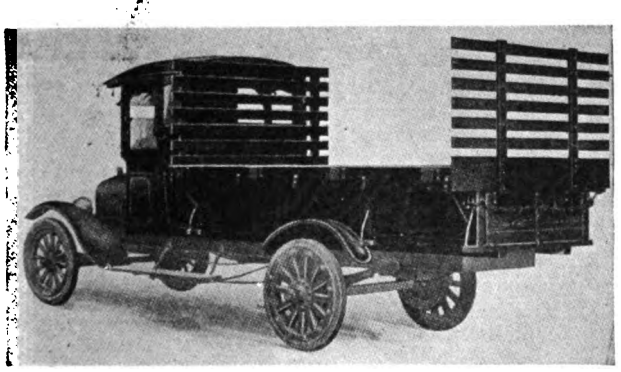
It has rigidity, combined with springiness, not found in the ordinary bumper. Channel bar is made of high carbon steel; the spring members are made of high carbon spring steel. The shock absorbing members consist of two full elliptic springs. These springs, which fit in the channel of the Auto-guard bar, extend away over toward the ends of the bar. This makes it strong where great strength is needed, for most shocks resulting from collisions are received at the ends.

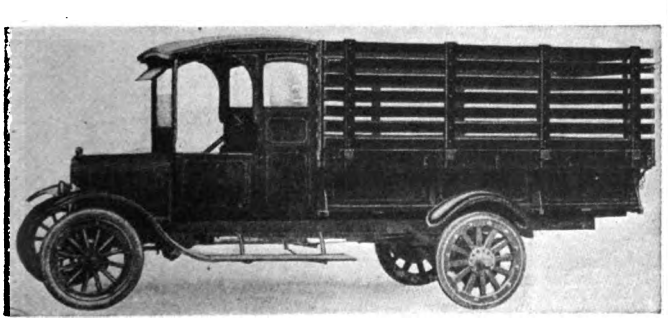
A license bracket is combined with it. Price $7.50; west of Rockies, $8.25.—Stewart Warner Speedometer Corp., Chicago.

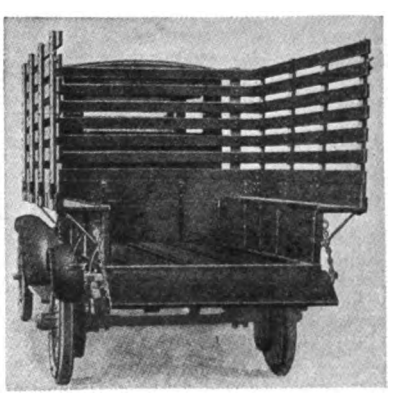
PARRY CONVERTIBLE FARM BODY

This body is known as No. 508 and is designed for a converted Ford chassis. It consists of an express body with removable side racks so that bulky material may readily be handled. With racks removed, it is useful for carrying heavier material. The clear loading space inside is 45 x 110 in. and the space between racks is 66 x 110 in. The racks are 52 in. high from the floor. Weight 850 lbs.; shipping weight, 1400 lbs.

A platform body with similar racks is also made. It is 60 x 112 in. Weight 750 lbs.; crated weight 1050 lbs.—Parry Mfg. Co., Indianapolis.



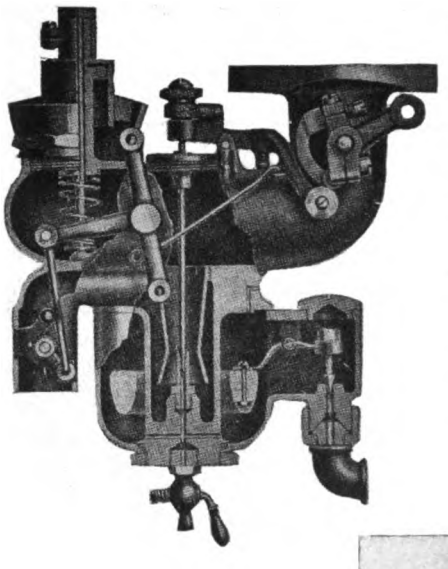




SPLENDOLA BODY FINISH

A cleaner for removing mud spots, rain spots, grease and corrosion from the car body, after which the finishing coat of Splendola liquid wax is applied. It is stated the wax produces a bone hard brilliant finish that is lasting, and does not hold or attract dust. In addition, this wax coating protects the finish of the car from the weather, especially the mud and snow of winter. For garage use, a Garage Special Body Gloss is provided that may be applied to damp surfaces without a chamois. Price $1.—C. F. Roberts Co., Detroit, Mich.

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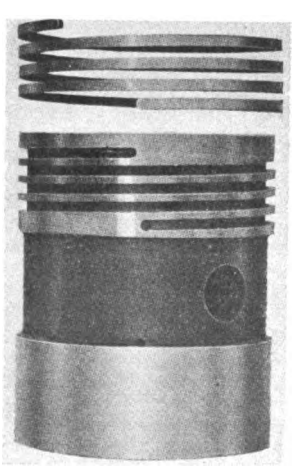
VAN BRIGGLE CARBURETER

A carbureter with an adjustable needle valve control of gasoline and main and auxiliary air inlet, the latter being controlled by a spring closed valve.

The claims are that the peculiar construction of the primary air chamber insures an absolute mixture of primary air and gasoline and perfect vaporization, and the relative position of the auxiliary air, the gasoline nozzle and the manifold which force the auxiliary air to travel through the primary mixture to reach the manifold, insuring a second complete mixture.

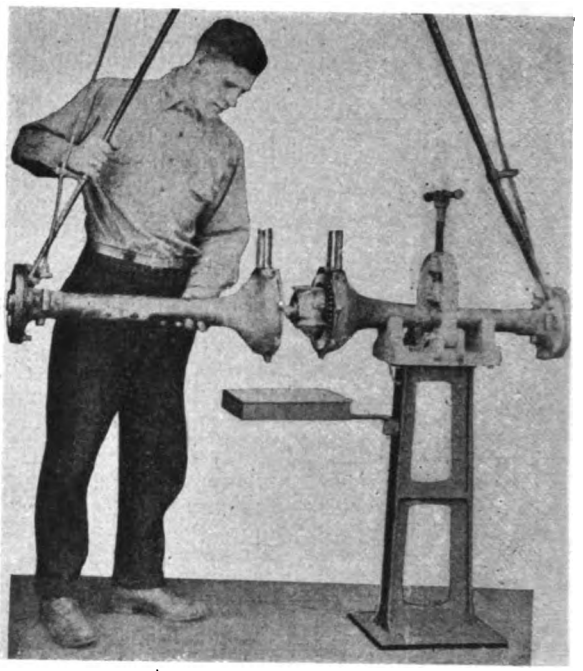
There is a complete and thorough mixture and vaporization in the venturi tube as the fuel issues from the jet. Because of the peculiar construction of the primary air chamber, the air enters the venturi tube with a whirling movement which aids in breaking up the gasoline.

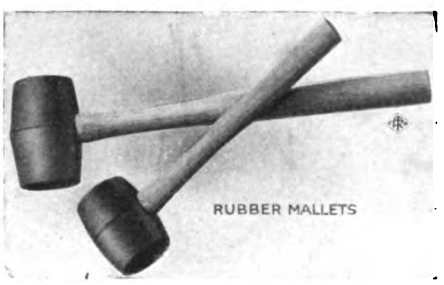
The needle valve is lifted by a cam attached to the throttle, which will give more fuel as the throttle is opened.—Van Briggle Motor Device Co., 429 N. Capitol Ave., Indianapolis.



CARSWELL-HAMMOND AXLE STAND

A stand designed to hold any rear axle in any position desired. It is bolted firmly to the floor. A grease pan catches the grease when taking an axle apart, thus keeping the floor clean. It is stated that it will save at least one-half the time required in taking apart and assembling an axle because it enables the workman to do the work more conveniently. Shipping weight, 140 lbs., price $24.—Carswell-Hammond Mfg. Co., Boone, Ia.

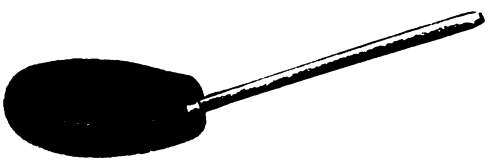




RUBBER MALLETS

THERMOID RUBBER MALLET

The head is made of a tough compound designed to withstand rough usage for a long time. The handle is second growth hickory. It is for use in place of a metal hammer and prevents injury to paint, woodwork, glass or metal and is particularly useful in making tire changes.—Thermoid Rubber Co., Trenton, N. J.



HALSTED AUTO BRUSH

A brush for washing the car. It is provided with a long handle so that every point can be readily reached. It is said to hold water like a sponge. Price 75 cents.—Halsted Brush Co., 71 Park Place, New York.



WORKRITE COMBINATION BATTERY FILLER

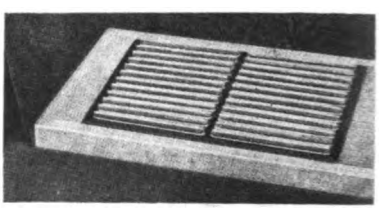
It is a hydrometer and battery filler combined, carried in a 1-qt. jar for distilled water, the filler forming the cork. Price, $1.50.—Workrite Mfg. Co., Cleveland.

HELIX PISTON AND RING

A one-piece, continuous helical ring the same width and thickness from one end to the other. It is designed to give an equal distribution of expansion over the full length, to adjust itself to the wear of the cylinder without leaving any gaps, to be proof against leaks and against the accumulation of carbon. It is readily applied by screwing on.—Pacific Gear & Tool Works, 1035 Folsom St., San Francisco.

SAFETY FIRST SIGNAL LAMP

A combined tail light and signal stop connected to the brake pedal so that when the pedal is depressed, the cover lifts, displaying the word "Stop." It is readily installed as there are no holes to drill. Price, including lamp and attachment, $5.—Universal Specialty Co., 1105 S. Seventh St., St. Louis.

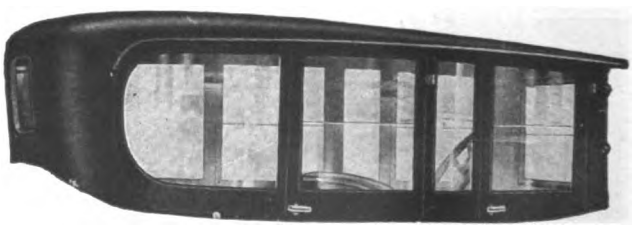


ANCHOR WINTER TOP

This top is designed to fit on the regular body irons of the car. It is said to be rigid, substantial and light and will not squeak or rattle. The interior is attractively lined with light whipcord and there is an electric dome light. It is shipped ready to put in place. Prices range from $62.50 to $165. They are made for Overland models 85B, four and six, and country club model 90; for Buick models D34, E34, D44, D45 and E 45; for Oakland models, 32, 34 and 50. Prompt deliveries are promised.—Anchor Top & Body Co., Cincinnati.

STANWOOD SAFETY STEP PLATE

A series of semi-pliable rubber segments inserted in an embossed metal gray-enameled plate. The segments project ⅛ in. above the plate and may be replaced when they become damaged or worn. Size 8½ x 12 in. x ⅜. Type A, 24 single rubber segments, $3.50; type B, black enameled, 2 rubber segments, 24 ribs, $2.50; type C, rubber molded on metal plate, 24 ribs, $1.50.—Stanwood Equipment Co., Boston.



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Boston's Enclosed Car Week Sells Cars

It Was a Good Week from Every Angle, But Will Be Changed Next Year

BOSTON'S first Enclosed Car Show Week has been quite successful from the viewpoint of sales made; practically every dealer expresses himself as satisfied with the number of cars sold. But on the score of attendance the week has not been so successful, though there is little to complain of, because sales have been so good.

There have been two factors which have affected attendance. During the first part of the week the weather was bad, though toward the end the sun shone and salesrooms were comfortably filled most of the time. The other factor was the location of the salesrooms in fairly widely separated sections of the city. It has not been easy to induce prospects to visit very many salesrooms in succession.

Plan to Have a Hall

That the week will be repeated next year seems assured, and already plans have been laid for a repetition. Only next year the demonstration will be arranged in a little different way. This year the salesroom of practically every member of the Boston Automobile Dealers' Association was decorated individually and each had an individual exhibit. Most of the exhibits featured enclosed cars, though those who had no enclosed cars displayed open ones, and one dealer reports a number of sales of truck forming attachments as a direct result of the week.

Next year it is planned to utilize a small hall. In it each dealer member of the association will have perhaps only one enclosed car on view, and if space permits perhaps two. Then at his own salesroom he will have a more extensive display.

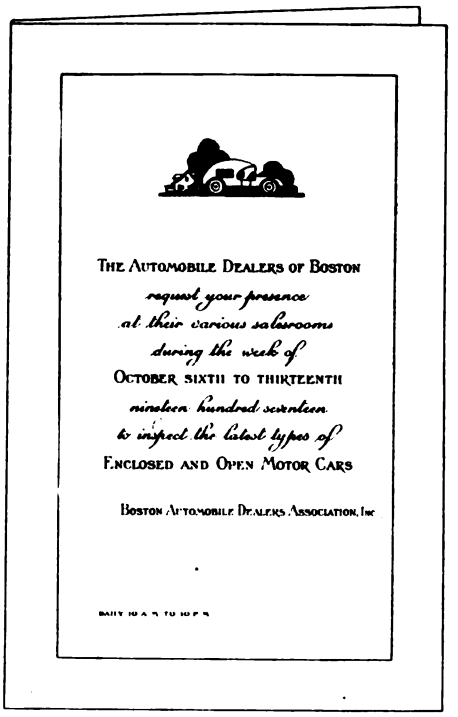
The thought is that visitors will flock to the hall show, where they can see all the models together and compare them. Live prospects for a certain make of car will be transported to the salesroom, where the complete line is on display and where the dealer's salesmen can work on the prospect without the distraction of the show. Almost without exception, dealers exhibiting this year are in favor of just such a plan as this, and very likely it will be adopted for the next show.

One thing the show has done is to create interest even where this interest has not been immediately crystallized into action. Dealers point out that every year about this time things become somewhat stagnant; interest wanes with the closing of the touring season and there is a fairly long lapse between the first show and the annual exhibition of new models in March. The enclosed car display has made people think and stimulated interest in a way that could not have been done otherwise.

Sales in All Classes

Sales have been frequent in every price class with the possible exception of the highest, which includes such cars as the White and the Pierce-Arrow. Even here, however, dealers report sales and live prospects. The most good will come to dealers in popular-priced cars. John H. Johnson, Buick dealer, and, by the way, the father of the movement for the Enclosed Car Week, reports that his salesroom was crowded from morning till closing hour. The same can be said of the Nash dealer, the Overland, Paige, Studebaker, Dodge, Oakland, Reo, Chandler, Saxon, etc.

It is the consensus of opinion that keeping open evenings does not pay. Some of the dealers in popular priced cars are very much in favor of keeping open, though the majority are of the opinion that it would be better to close up shop at the regular hour. Johnson was the only dealer who arranged for an orchestra, and says it helped a lot. Other dealers believe that the worst place at the annual March exhibition is near the band, and, operating on this theory, omitted it.



35 000 of these engraved invitations were sent out to Boston car owners by the Dealers' Association

Show Well Advertised

The amount of publicity which the week has brought the dealers and the enclosed car in general has been very gratifying. All the newspapers carried Enclosed Car Sections in their Sunday editions; most of them had the news of each day on the front page, and all of them carried columns of editorial matter every day in their automobile sections. In addition, the streets were decorated, and, all in all, everybody in Boston who is anybody knew that there was an Enclosed Car Show Week in progress.

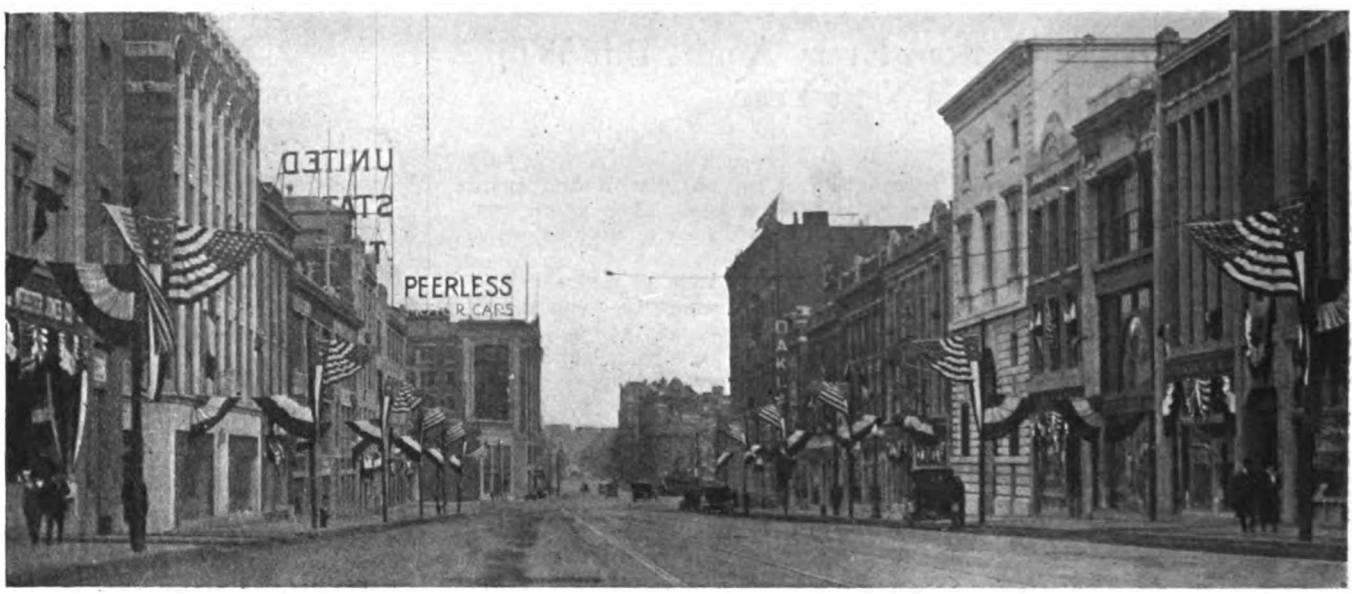
There are pictures on the next two pages and a story of how the week was run on page 38.



Here are samples of the ads which the Boston Automobile Dealers' Association carried in all the daily and Sunday papers during the week. They all emphasized the one point, "In 100 Boston Automobile Salesrooms"

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How Boston Dealers Decorated



Above is a photograph of Beacon Street as it appeared during the continuance of Boston's first Enclosed Car Show Week. The decorations were put up by individual dealers and by the Boston Automobile Dealers' Association. Everyone who is anybody at all knew there was a real enclosed car show in progress in Boston



This is how the C. P. Rockwell company let it be known that the new Nash had arrived. The decorations served to attract to the enclosed car show and also to advertise the new car

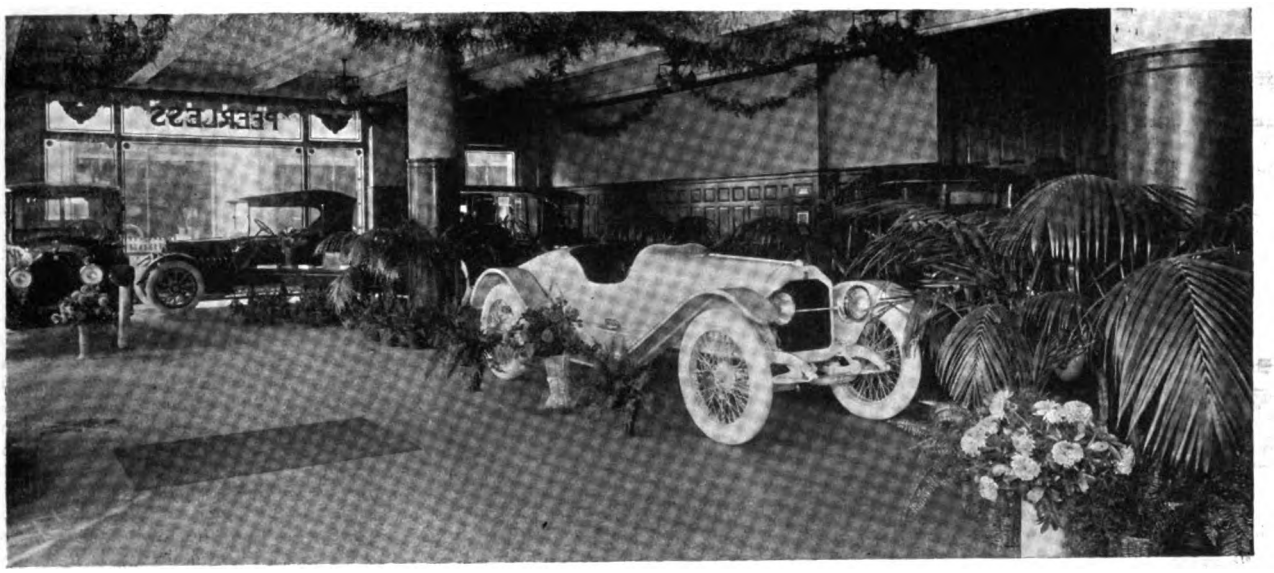
The Oldsmobile dealer was not at all modest in his announcement of the ability and achievements of the new car. Here, too, the decorations served a dual purpose. And at the lower right is shown how the C. E. Fay Co. used flags to draw attention to its showroom



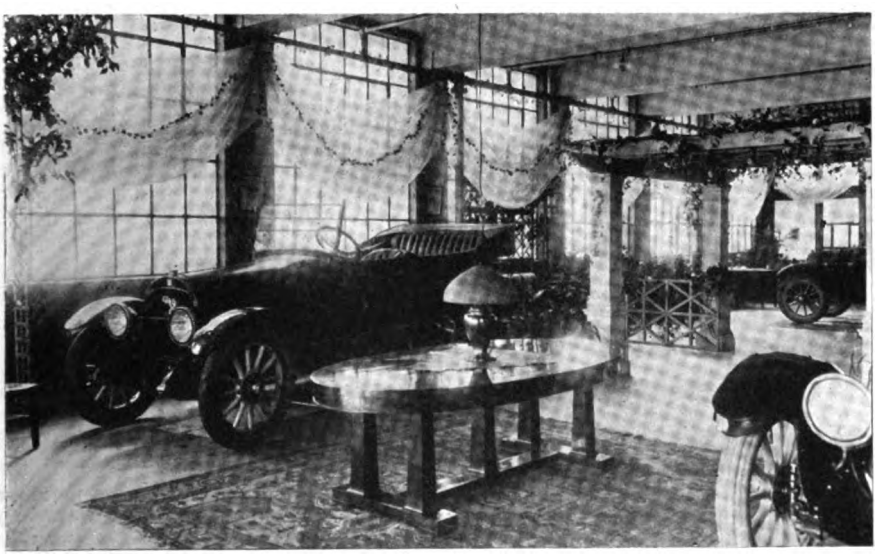


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For Their Enclosed Car Week



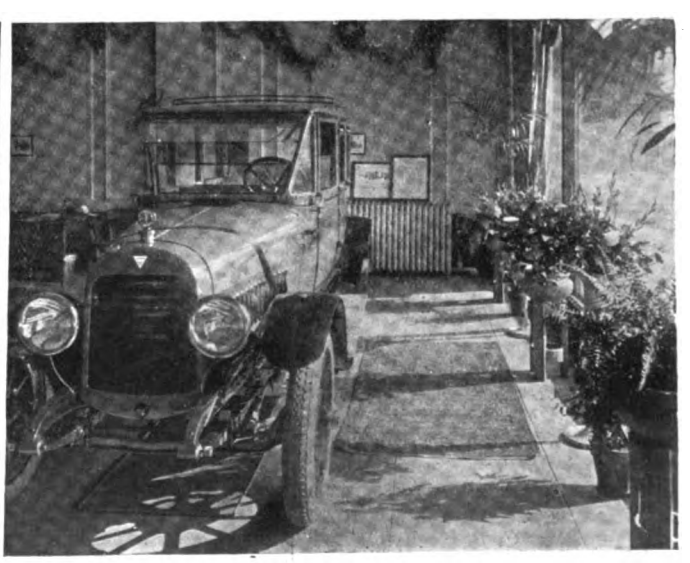
Peerless had one of the most beautifully decorated showrooms in the city, though it is plain to see that little else than potted plants was used to obtain the air of restrained festivity which was sought



The Cole dealer made good use of filmy bunting and trailing flowers. A little farther back a veritable bower was made for a single car which was virtually enthroned all by itself. The table and lamp are an excellent touch

John H. Johnson, Buick dealer, and the father of the movement, was the only one to have an orchestra, and he says it helped a lot. His decorations were somewhat more elaborate than those in any other salesroom and very attractive. The Henley-Kimball Company, Hudson dealer, built a sort of open conservatory in its show window





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Letters

sent by the Boston Automobile Dealers' Association to stimulate interest in the Enclosed Car Week

Messrs. Blank & Blank, Somewhere in New England:

Gentlemen—Here is some news that will bring you business and make you money this fall.

From Oct. 6 to 13 inclusive the Boston Dealers' Association will hold a Closed Car Week in Boston. The exhibits will be in the salesrooms of the different automobile dealers. Thousands of dollars will be spent in properly advertising this event. Engraved invitations will be mailed to 35,000 car owners. All stores will be attractively decorated and lighted. There will also be appropriate street decoration. In other words, we are going to have a great big boom week. The result will be that the same impetus will be given to the automobile business this fall that has been given to the business each spring by the annual Automobile Show.

Every New England man in the industry can benefit by this plan and every man should co-operate toward making it a great success.

We want you to be here for all or part of the week and we want you to bring with you as many prospects as possible, but in any event not less than two. If they are real prospects there is no question but what they will be sold. The State will all be set for automobile buying, and you can reap the benefit. Don't let anything interfere with your coming.

Return the enclosed post card to us immediately, advising what days you will be here and the probable number of prospects you will bring. Do it now. Yours very truly,

Messrs. Blank & Blank, Somewhere in New England:

Gentlemen—You could not have realized the importance to you personally as well as to the industry at large of the Closed Car Week to be held in Boston Oct. 6 to 13 inclusive, or you would have replied to our former letter on the subject.

The spring automobile shows are largely responsible for the wonderful interest that is shown in automobiles and the remarkable growth of the industry. This fall Closed Car Week will give us the same impetus at this season of the year.

Because we call it Closed Car Week does not mean that only closed cars will be sold. Very likely there will be more buyers for open than the enclosed models. The point is that the whole industry will receive a boom. You are a part of the industry and WE WANT YOU HERE.

Write us immediately when you will arrive, as the Association wants a record of every New England dealer who will be present.

Yours very truly,

To the Progressive Automobile Dealers of New England:

You registered at the last Boston Automobile Show, and we expect you to be with us again in March, but in the meantime the Boston Automobile Dealers' Association are offering to the live, up-to-date agents of New England an opportunity for more business.

The week of Oct. 6 to 13 has been set aside as CLOSED CAR WEEK. The Boston dealers and distributors are going to make it a great big gala motor week. A large amount of money will be spent for advertising and decorations. Each dealer will keep open house daily, from 10 a. m. to 10 p. m.

Now listen, the entire trade of New England are invited here that week—come and bring your customers. Visit your Boston distributor, retailer or factory representative. Join in the festivities. Register at your Boston headquarters (so you will be on the list for the Boston show in March) and do what you can in your own territory for more business. We'll help you to get the sales by putting "pep" and enthusiasm in the salesmen and desire in the customers.

Send word at once to your Boston representative that you are coming for at least one day and that you will do what you can to boost interest in your territory.

If you would like some fine engraved invitations to send to your prospects or customers, we can furnish them at $5 per hundred, including envelopes.

The Closed Car Week,
Oct. 6 to 13,
At All Salesrooms, Boston.
BOSTON AUTOMOBILE DEALERS' ASSOCIATION, INC.,
CHESTER I. CAMPBELL,
Secretary.

(*Read the story on page* 35)

How the Enclosed Car Week Was Engineered

CREDIT for the idea behind the week belongs to John H. Johnson, Buick dealer, who, with the assistance of a number of committees, handled all the work of organizing the week and putting it across in good shape. The detail work was done largely by the Boston Automobile Dealers' Association.

When Johnson conceived the idea he immediately appointed his committees. These consisted of a committee on Advertising, consisting of C. S. Henshaw and John F. Mahoney; a committee on Visiting and a committee to see the publishers of newspapers. Johnson was chairman of this committee, as well as chairman of the general committee, and C. S. Donovan, of the Studebaker, worked with him on the latter.

It was the duty of the Visiting Committee to visit every dealer in the association and get him thoroughly sold on the Enclosed Car Week idea, explain the working of the plan, the method of decoration and do what winning over was necessary. There were ten teams on this committee as follows: I. A. Howell and C. S. Henshaw, C. P. Rockwell and C. E. Fay, R. B. Nettleton and Frank Allen, G. B. Kimball and W. J. Connell, C. S. Donovan and Otto A. Lawton, John H. Johnson and F. W. Stockbridge.

Getting the Publishers Sold

The committee which visited publishers of newspapers made it its duty to get the publishers sold on the idea. And that they did so is evidenced by the hearty support which the newspapers gave the week.

The Advertising Committee had as its particular job the writing of all advertising copy, several examples of which are shown herewith; the picking out of mediums and the scheduling of copy; the arrangement of street signs and the decorating.

At the offices of the association Chester I. Campbell had charge of affairs. An engraved invitation, which is illustrated, was sent out to 35,000 registered owners of motor cars in Greater Boston. The invitations cost $800 and the mailing $700. In addition, the association spent $3,000 in general advertising. The association also sent letters to all dealers in New England and supplied two letters for these dealers to send to their subdealers.

To offset part of the expense members of the association were assessed $25 each. In addition a number of the leading tire and accessory men were invited to subscribe and did so. The dealers themselves paid their own bills for individual decorations, the expense varying from $25 or $30 for the simpler displays to as much as $200 in the case of the Connell & McKone Co., which had quite an elaborate setting.

Dealer Stages a Show

MILWAUKEE, Oct. 13—The Hoppe-Hatter Motor Co., 486 Milwaukee Street, Milwaukee, Wisconsin distributer of the Paige, conducted an enclosed car salon in its showrooms on Oct. 11, 12 and 13. The Western Motor Supply Co., 408 Jefferson Street, co-operated with a display and demonstrations of accessories. A complete style show was held in connection with the car show, this being staged by the Reel Quality Shop, one of the leading women's wear houses of Milwaukee.

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ROCHESTER, Oct. 15—The annual sales conference of division sales managers of the Selden Truck Sales Co. was held at the company's general office at Rochester, N. Y., during the week of Oct. 1. The Selden company, under the guidance of sales director Hal T. Boulden has divided the United States into seventeen districts, each district being in charge of a representative equipped to help the dealer to figure haulage problems.

An aggressive sales and advertising campaign was outlined. A "surprise party" tendered to President George C. Gordon was one of the features of the meeting. At "the party" the division sales managers turned in bona fide orders totaling 156 trucks.

Sales Director Boulden was presented with a silver service as a token of the appreciation and esteem in which he is held by the boys representing the division organization.

The home office organization is shown in the photograph. Commencing with the fourth man in the front row, from left to right, they are William C. Barry, Jr., factory general manager; George C. Gordon, president and treasurer; Robert H. Salmons, secretary, and Hal T. Boulden, sales director.

Chicago's Last Races Establish New Marks

Alley, Mulford and Henderson Take the Three Events, Eclipsed by World's Series Game

Chicago Speedway, Oct. 13—Tom Alley won his first speedway race Saturday afternoon and Ralph Mulford stepped up from third to first in the second event, winning by inches. Pete Henderson in a third event won his first race on the Chicago track, the fastest ever staged here for the distance, all this before a crowd that took more interest in the play by play announcement of the fifth world's series game and only came out of concealment at intervals when a Sox runner scored.

Close finishes and an accident furnished thrills, but the wildest burst of enthusiasm came in the announcement of the fateful seventh inning when the Sox hung up three runs and tied the score.

Yesterday the speedway management attempted another race as a close to a season that has not been successful but called it off. It would require but little of one man's time to have notified each one present individually that there would be no race. Thus the season's close here is comparable to ebb tide. Three events were carded for the Saturday race 20, 50 and 100 miles, but the latter was cut to 50 miles by mutual consent of the drivers and the AAA representative.

Of ten entries only eight started in the first event of 20 miles, Joe Boyer's Frontenac and Mason's Ogren being marooned in their respective garages. The starters were: Gil Anderson, Miller Special; Ralph Mulford, Frontenac; Dave Lewis, Hoskins; Gaston Chevrolet, Frontenac; Tom Alley, Pan-American; Tom Milton, Duesenberg; Pete Henderson, Roamer Special; Percy Ford, Delage Special.

Alley took the lead in the first lap, held it for four laps, released it for four more, then took it for two and the finish winning his first speedway race in 11.22.10 at a speed of 105.56 m.p.h.

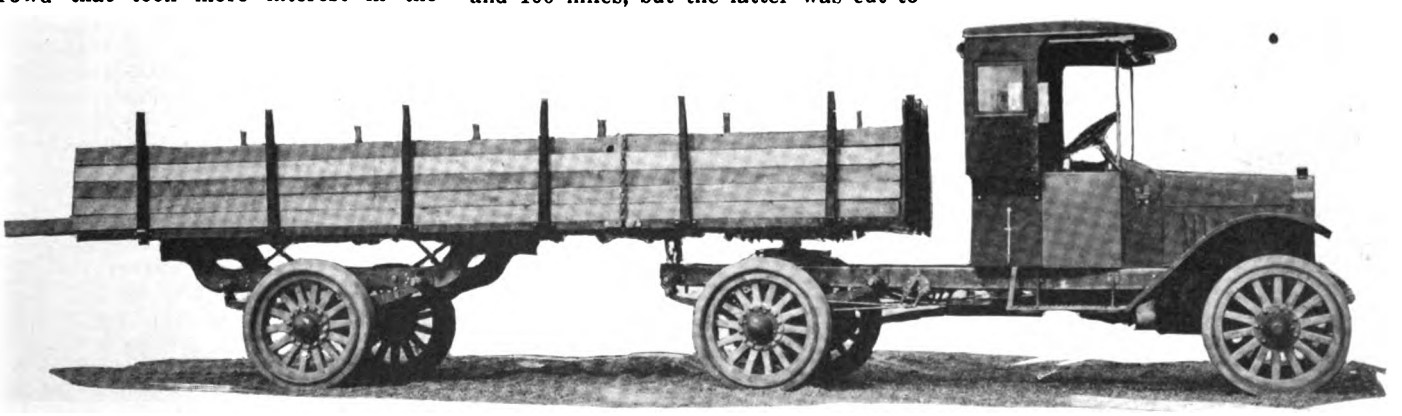
Six faced the starter for the second event at 50 miles. Fresh from victory in the previous race Alley began setting the pace from the first. The last lap of the event was a surprise. Alley was still leading as they came out of the turn into the homestretch but in that short space Mulford and Anderson passed him. Thus, though third and fifth at the beginning of the last lap, they finished first and second, one-half a second between first and fifth.

Never has Chicago seen such a finish, but applause was lacking. Mulford's average was 105.96 m.p.h.

Tom Alley, as in the two previous events, took the lead at the start of the third event but at 16 miles Pete Henderson assumed the role of leader; Tom Milton was second. Alley went down to third with Mulford fourth. From the twentieth mile there were but four in the race, Henderson leading, Mulford second, Milton third and Alley fourth. At 30 miles Henderson had increased his speed to 106 m.p.h.

The quartette went into the eighteenth lap closely bunched. Difficulties arose at the first turn. Milton grazed the tail of Mulford's Frontenac, his car swerved and Alley crashed into Milton's Duesenberg but no one was hurt.

This eliminated all but Henderson and Mulford, the former finishing in 27.22.21, while Mulford's time was 27.27.27, their speeds being 109.62 and 109.32 respectively, the fastest ever done on the local track for 50 miles.



ALLENTOWN, Pa., Oct. 16—The Bethlehem Motors Corp. has placed on the market a new tractor and trailer equipment which is to be sold either as a unit including the tractor, a fifth wheel and trailer outfit at $2,565, or the tractor unit alone at $1,865. The tractor unit has a power take-off from the transmission and is designed to take any type of truck body with a hoist to be operated by the truck motor. Any make of power hoist can be installed and any style of body may be used.

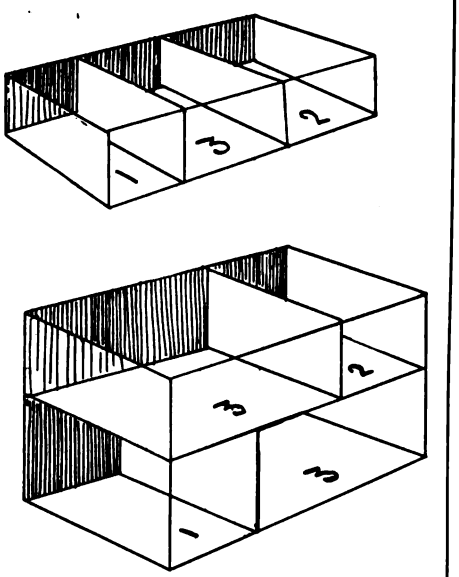
Model B1 is the designation for the tractor and trailer outfit, the tractor having a wheelbase of 120 in. and the total capacity of both units being 5 tons. The length of the trailer body may be 14, 16 or 18 ft. The trailer is fitted with 6-in. single tires, and has the same wheels and rear axle as used on the standard 2¼-ton Bethlehem. The fifth wheel is manufactured by the company.

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How to Locate Your Departments

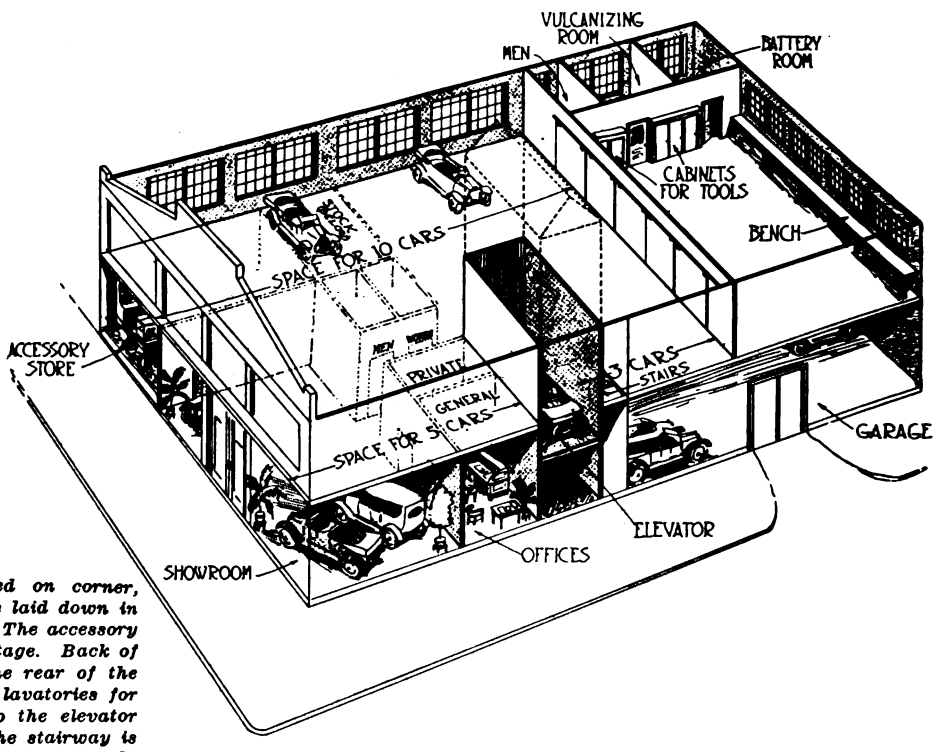
First Principles in Laying Out a Dealer's Building

See article on pages 20 and 21

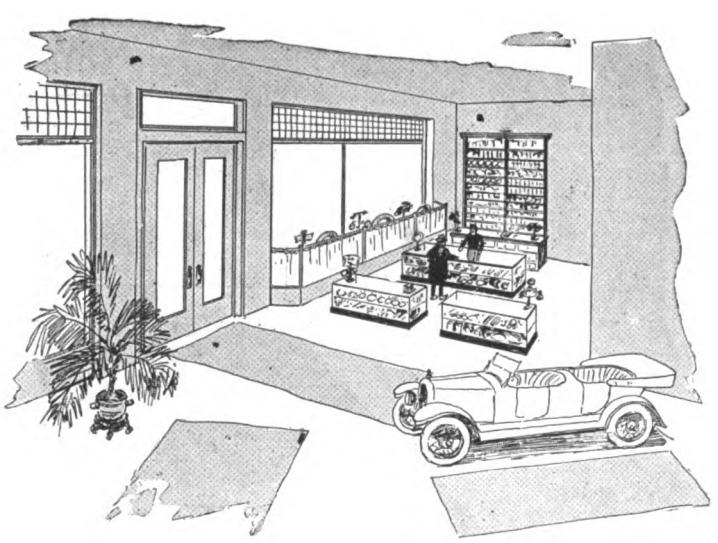


1 SHOWROOM 2 REPAIRSHOP 3 GARAGE

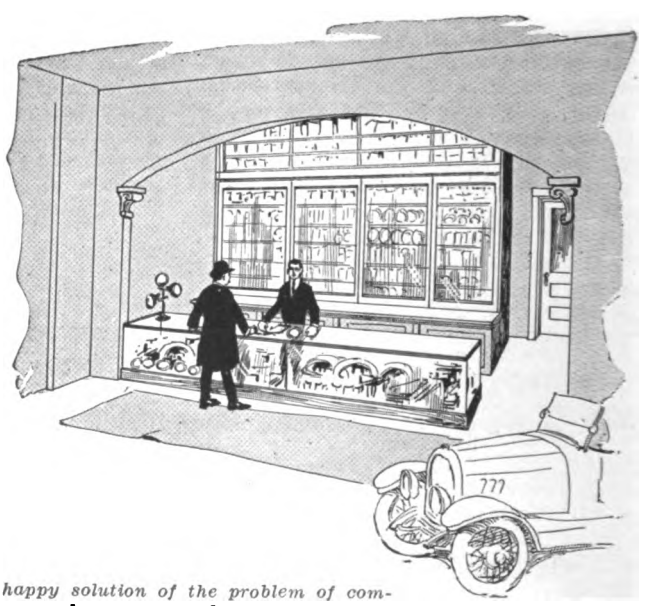
The upper sketch shows a one-story and the lower a two-story building. Each unit should be an oblong. In both cases the showroom unit extends across the front of the building. It includes the accessory store, offices, etc. The shop unit occupies a block of space at the rear, having the advantage of good light from the rear windows.



Complete dealer plant situated on corner, laid out according to principles laid down in the story on pages 20 and 21. The accessory store occupies part of the frontage. Back of it is the stockroom, and at the rear of the showroom are the offices, and lavatories for men and women. Entrance to the elevator is direct from the street and the stairway is located alongside. The shop is compactly arranged at the rear of the second floor



One attractive arrangement which may be used if the placing of the store in a separate room is not desired. The store is situated in an ell at one side of the showroom, to the rear is the stockroom. This layout offers the same advantages obtainable by combining cars and accessories in one room, yet the store is a distinct unit



Another happy solution of the problem of combining car and accessory departments. The store is placed in an alcove opening into the showroom. The broad showcase extending across the alcove serves to make the two departments distinct, yet for all practical purposes they are one. This arrangement may be used either at the side or the rear

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Army Trucks Speed Toward Washington

First Two Completed Started on 10,000 Mile Test Run—How They Were Built

WASHINGTON, Oct. 15—The first heavy duty war truck which the Quartermaster Department has been designing since the first of August has been assembled and started running in Lima, Ohio, Oct. 8. Another was assembled in Rochester, N. Y., and it was completed and started on the road Oct. 8. Both are type B trucks designed for 3-ton load but with a capacity for 5 tons.

The assembling and the designing sets a new record in American production, the first truck, according to schedule, having to be ready for the road October 10, so that it came through two days ahead of schedule.

Early motor tests showed 58 hp. at 1350 r.p.m., and the engine torque curve has been better than anticipated.

It is now assured that the truck is one of the biggest engineering successes of the war, and that it is destined to revolutionize army truck work so far as standardization is concerned. And that the truck will play a big part in revolutionizing truck design in commercial circles is assured.

That the War Department as well as the engineers who worked on the job at the request of the Quartermaster and as members of the Society of Automotive Engineers are convinced that it is right is evinced by the fact that already orders for 10,000 parts for the truck have been placed, these orders including engines, axles and other parts. These orders have been widely placed over the industry, generally three or more different concerns receiving orders for each of the different parts. As soon as plans mature it is expected that orders for many additional trucks will be placed.

The criticisms as to the truck being too heavy for its carrying capacity have been largely dissipated by official weight given out by those concerns building the units entering into the first machines. The truck maker who assembled the first truck states that the total weight of the chassis without body is 8600 lb., which, with a 1600-lb. body, will bring the total up to 10,000 lbs. This is very little heavier than some of the best 5-ton trucks now on the market. Considerable paring will be done on this weight, as there are several places where weight can be reduced with comparative ease.

A few examples of weights as given out by makers that have produced some of the parts gives an indication of how well the engineers have done their job notwithstanding that they were under orders to build a stout robust job suited to the extreme service of the war zone.

With different makers these weights vary from 40 to 50 lb. in the cases of the motor, and there are smaller variations with other parts. Without doubt weights of these parts taken after they are well in production will show many cuts in all of these figures.

	Lbs.
Body	1600
Motor	1012
Rear axle	1592
Front axle	352
Gearbox	233
Clutch and case	103
Frame without castings	653
Front springs	148
Rear springs	544

Roughly there were four major divisions of the engineering job, (1) the engine, (2) the transmission, (3) the axles and (4) the chassis parts. Each was executed by a corps of engineers. There were three, four and in some cases five different companies represented in the work on one unit and it was necessary for them to get together and produce the best.

The speed with which the different makers tackled their respective jobs and completed them is shown by the following:

Continental, which was one of the several engine concerns to work on the engine, got its blue prints on October 9 and the engine was running in 19 days and 18 hours.

Waukesha made a still better record, getting its first engine running in 11 days 7½ hours from the time the blue prints reached its factory. These companies did not have to make the patterns for castings or the dies for forgings, these having been previously made, but they had to do all the machining and other operations on the parts.

In developing the engines, four or five engine makers co-operated by dividing the different parts among them, one concern making several parts not only for itself but for the other engine makers. In this way time was economized.

Thus, Continental made the cylinders, gear case cover and many small parts such as pumps, bushings, etc. Waukesha manufactured the cylinder heads, the crankcase, intake and exhaust manifolds, roller push rods, etc. Wisconsin made the lower part of the crankcase. In this way the work was farmed out.

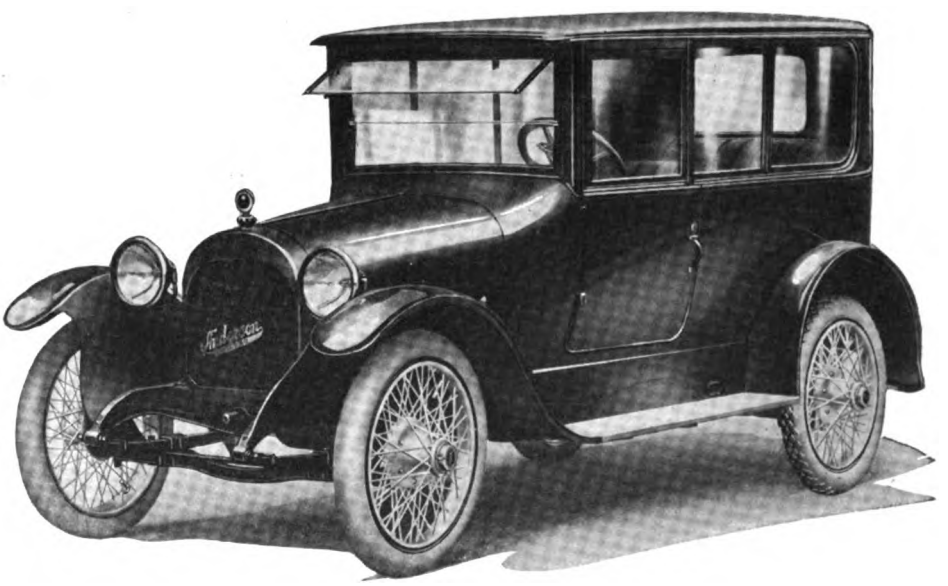
In summarizing the co-operating talent embodied in the engine, it might be said that the crankcase is Continental, the cylinders Waukesha, the oiling system Wisconsin, the pistons Hercules and the timing gear system a combination of Buda, Wisconsin and Continental. The governor is a combination of Kelly-Springfield and Waukesha. The camshaft is a composite design.

The engine has been designed with the thought in mind of the use of heavier fuels, including kerosene, and is such that heavier fuels will only call for an extension of the manifold system, the combustion chambers and many other parts having been designed to meet the requirements of heavier fuels.

What has been said of the engine can be said of the transmission, the axles, and many chassis parts. Three or four of the leading axle makers have worked together on the axle designs. So with the transmissions.

Ford Enclosed Cars Cost More

DETROIT, Oct. 16—The Ford Motor Co. has increased the prices on all its enclosed models, due to the increased cost of materials. The new price of the coupelet is $560; the sedan is $695; the town car is $640. There has been no advance in other models.



ROCK HILL, S. C., Oct. 15—The new Anderson convertible sedan seats five passengers and sells for $2,165; with five wire wheels, $110 extra. It is provided with individual front seats and staggered doors and is offered with a two-tone color combination. The body is aluminum to insure light weight and the skeleton is seasoned wood, braced and counterbraced with joints mortised, insuring a job free from rattles and rumbles. The finish is hand applied and hand rubbed. The interior is upholstered in fine fabrics in tones to match the body colors. There is a dome light, cushions are deep and wide and there is plenty of leg room. The driving controls are easy to reach and comfort in cold weather is enhanced by the presence of a Perfection heater. There is a ventilating windshield protected from the rain by an overhanging glass screen. Doors are equipped with Yale locks. It is made by the Anderson Motor Co.

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Accessory Exhibitors Get Their Show Space

Ninety-Eight Get Space for New York and 90 in Chicago—Few Names Are Missing

NEW YORK, Oct. 15—Ninety-eight accessory exhibitors have been allotted space at the New York National show, Jan. 5-12, in Grand Central Palace, and 90 have been given space at the Chicago show, Jan. 26-Feb. 2. The complete list for both shows follows, the names with asterisk (*) or dagger (†) being exhibitors at both shows:

A-B-C Starter Co.....Detroit
American Bronze Co.....Berwyn, Pa.
American Ever Ready Works, Long Island City
Anderson Forge & Machine Co.....Detroit
Au-To Compressor Co.....Wilmington, O.
Becker Bros.....Chicago
Benford Mfg. Co.....Mt. Vernon, N. Y.
*Breeze Mfg. Co.....Newark, N. J.
Brown-Lipe-Chapin Co.....Syracuse
Brunner Mfg. Co.....Utica
Buda Co.....Harvey, Ill.
*Budd Mfg. Co.....Philadelphia
Byrne, Kingston & Co.....Kokomo
Century-Plainfield Tire Co.....Plainfield
Champion Ignition Co.....Flint
Clark Equipment Co.....Buchanan, Mich.
†Continental Motors Co.....Detroit
Corbin Screw Corp.....New Britain
Corcoran-Victor Co.....Cincinnati
Corning Glass Works.....Corning, N. Y.
Cowles & Co..... New Haven
Dann Products Co.....Cleveland
Detroit Pressed Steel Co.....Detroit
Dixon Crucible Co.....Jersey City
Doehler Die-Casting Co.....Brooklyn
Du Bois Piston Ring Co.....Albany
E. A. Laboratories, Inc.....Brooklyn
Eclipse Machine Co.....Elmira, N. Y.
†Edison Storage Battery Co...Orange, N. J.
Electric Storage Battery Co.....Philadelphia
*English & Mersick Co.....New Haven
*Ericsson Mfg. Co.....Buffalo
Findeisen & Kropf Mfg. Co.....Chicago
Gabriel Mfg. Co.....Cleveland
Gemco Mfg. Co.....Milwaukee
†General Electric Co.....Schenectady
Gould Storage Battery Co.....New York
Gray & Davis, Inc.....Boston
*Hale & Kilborn Co.....Philadelphia
Halladay Co., L. P.....Streator, Ill.
Harrison Radiator Corp.....Lockport, N. Y.
*Hartford Machine Screw Co.....Hartford
Hartford, Inc., Edward V.....Jersey City
Hassler, Robert H.....Indianapolis
Hayes Mfg. Co.....Detroit
Hayes Wheel Co.....Jackson
Heinze Co., The John O.....Springfield, O.
Heinze Electric Co.....Lowell, Mass.
*Herz & Co.....New York
†Imperial Brass Mfg.....Chicago
*Janney, Steinmetz & Co.....Philadelphia
Kellogg Mfg. Co.....Rochester
Kent Mfg. Work.....Philadelphia
Klaxon Co.....Newark, N. J.
*Light Mfg. & Foundry Co.....Pottstown
Lipman Air Appliance Co.....Beloit
Mann Co., F. W.....Milford, Mass.
Merchant & Evans Co.....Philadelphia
Metal Stamping Co.....Long Island City
Miller Transmission Co.....New York
*Morse Chain Co.....Ithaca, N. Y.
Mosler & Co., A. R.....Mt. Vernon, N. Y.
Moto-Meter Co., Inc., The...Long Island City
National Carbon Co.....Cleveland
New Era Spring Co.....Detroit
*New York Coil Co.....New York
†Oakes Co..... ..... Indianapolis
*Pantasote Co.....New York
Parker Rust Proof Co. of America....Detroit
Parry Mfg. Co.....Indianapolis
Philips-Brinton Co.....Kennett Square, Pa.
Piel Co., The G.....Long Island City
Rand Mfg. Co.....Haverhill, Mass.
Raybestos Co., The.....Bridgeport
Rex Mfg. Co.....Connersville
Rowe Calk Co., The.....Hartford
Schrader's Son, Inc., A.....Brooklyn, N. Y.
Shakespeare Co.....Kalamazoo, Mich.
Shaler Co., C. A.....Waupun, Wis.
S. K. F. Ball Bearing Co.....Hartford
*Sparks-Withington Co.....Philadelphia
Splitdorf Electrical Co.....Newark, N. J.
Standard Welding Co., Division Standard Parts Co .....Cleveland
Standard Woven Fabric Co...Walpole, Mass.
*Stewart-Warner Speedometer Corp.Chicago
Stromberg Motor Devices Co.....Chicago
Superior Lamp Mfg. Co., Inc.....New York
*Syracuse Malleable Iron Works....Syracuse
Taft-Pierce Mfg. Co.....Woonsocket, R. I.
Universal Shock Eliminator, Inc...New York
Vacuum Oil Co.....New York
Van Sicklen Co., The.....Elgin
Veeder Mfg. Co., The.....Hartford
†Vesta Accumulator Co.....Chicago
Voorhees Rubber Mfg. Co.....Jersey City
†Wagner Specialty Co.....New York
Waltham Watch Co.....Waltham
†Warner Gear Co.....Muncie
Warner Lens Co.....Chicago
†Waukesha Motor Co.....Waukesha
West Side Foundry Co.....Troy, N. Y.
Wheeler-Schebler Carbureter Co., Inc., Indianapolis
Willard Storage Battery Co., The..Cleveland
*Wilson Body Co., C. R.....Detroit
Wilson & Co.....Chicago
Woodworth Mfg. Corp., The, Niagara Falls, N. Y.
*Zenith Carburetor Co.....Detroit

*New York only.
†Chicago only.

Smith Truck Assets $3,500,000

CHICAGO, ILL., Oct. 13—The principal creditors of the Smith Motor Truck Corp., representing 75 per cent of its indebtedness, have agreed to extend the obligations for six months at 6 per cent, and to grant further extension on 80 per cent of the indebtedness if desired at the end of six months. An audit shows possible assets of about $3,500,000 and liabilities of $1,800,000. The following committee was appointed to take charge of the creditors' interests: David Forgan, W. R. Dawes, O. J. Feehling, P. L. Coonley, all of Chicago; C. E. Danforth, New York, and P. A. Connoly, Cleveland.

Stratton Heads Colt-Stratton

NEW YORK, Oct. 15—Following the retirement of W. L. Colt from the presidency of the Colt-Stratton Co., Metropolitan Dodge distributer, Harry L. Stratton has been elected president of the company and H. R. Bliss, formerly sales manager, has been made vice-president and general manager.

Shotwell Receivership Discharged

INDIANAPOLIS, Oct. 15—The receivership of the Shotwell Pump & Tank Co. has been discharged. The firm is solvent and able to take care of anything it owes and to go ahead with manufacture.

Holds Sales Meeting For Salesmen's Wives

National Cash Register Reaches Over Its Men's Shoulders in Order to Make Them Better

DAYTON, OHIO, Oct. 15—In order to make the wife a better partner of the salesman, the National Cash Register Co. is this week holding a sales convention of the wives of its men from all over the United States. The men are not here. They stayed at home to sell cash registers in the 50,000 point contest that is on for October.

This big convention of between 300 and 500 women is a radical move in sales work. It is made in the belief that the home life of the man is all important in the man's work. The company is virtually reaching over the shoulders of its men and into their homes in order to get a fuller value from the men and make the men better earners and providers.

It is planned that the wives shall be made to see that nothing should stand in the way of the husband. He should be helped, encouraged and pushed along in every possible way. There hangs upon the walls of the big convention hall these ten ways in which the wife may help the man:

1—Serve simple food.
2—Keep him cheerful.
3—Give him plenty of fresh air.
4—See that he gets plenty of sleep.
5—Lend encouragement at the right time.
6—Encourage him to take regular exercise.
7—Be economical and save for a rainy day.
8—Take a real interest in his sales record.
9—Study merchants' needs and help with tips on business.
10—Read National Cash Advertising and call attention to important things.

As ways in which the man may lose earnings, a big wall chart mentions staying at home too much, eating too much, not studying, not using company methods, etc.

The women are enthusiastic. The movement, which extends until Friday, gives promise of being successful. If the National Cash Register Company can get greater efficiency from its men by bringing instructions to bear directly upon the women it may have radically altered the world's entire selling business.

Four Drive Car From Akron

AKRON, Oct. 12—The Mackey Motor Co. has been capitalized for $250,000 and plans to manufacture a four-wheel drive automobile. J. C. Mackey is president and manager; J. A. Backman, vice-president and director; A. A. Miller, sales manager; J. A. Seller, secretary and treasurer, William Roberts, purchasing agent and construction engineer.

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Electrical Show On in New York City

Only Three Makers of Electric Vehicles Represented—Storage Batteries on Exhibition

NEW YORK, Oct. 15—The Electrical Show held annually in the Metropolis is now running at the Grand Central Palace, having been opened on Oct. 10, and being scheduled to continue until the 20th. While the domestic appeal predominates at the show, electric heaters, cookers and lighting fixtures and electrically-operated washing machines being exhibited in great variety, automobiles of the electric type, storage batteries and various electric appliances used either on the car or in the garage are also found among the exhibits.

Only three makers of electric vehicles are represented at the show, these being the General Vehicle Co., Long Island City, N. Y.; the Ward Motor Vehicle Co., Mt. Vernon, N. Y., and the Baker, Rauch & Lang Co., Cleveland.

The General Vehicle Co. has on exhibition a 3½-ton electric truck with slat side body. This company is also engaged in the manufacture of Gnome rotary airplane engines, for which it holds the American manufacturing license. These were originally built for the British Government and are now being supplied to the United States Government. A complete Gnome 100-hp. engine with propeller attached is shown on a stand at the company's booth, and there is also a display of various imporant parts of the engine.

The Ward Motor Vehicle Co. exhibits a 2-ton truck chassis and a 750-lb. truck chassis. In the case of the 2-ton vehicle the battery is carried in an underslung sheet steel battery case, extending far out from the side of the frame, about even with the hub caps. The motor is located forward of the battery box and transmits its power through a tubular shaft extending through a space between the two halves of the battery box, which is supported in a bearing at the rear of the battery box, and thence through the regular propeller shaft, which contains two universal joints. A drive corresponding to the Hotchkiss drive on gasoline trucks is used.

Two very attractive looking passenger vehicles of the same type are shown by the Baker, Rauch & Lang Co. These are four-passenger enclosed cars, known as model BX-7. They are built entirely in the factory of the Baker, Rauch & Lang Co. for high-class trade. The body is aluminum and has a roof of patent leather cloth, along both sides of which runs a gutter, which drains at the four corners, thus keeping the drip off the car and protecting the passengers in entering and leaving. The windows are set in rubber frames to prevent water from blowing through and also to prevent rattling. All of the windows with the exception of the two curved corner panels can be let down, thus making the car an all-weather vehicle. The windows in the doors are operated by a handy crank and can be raised or lowered to any degree desired.

Three manufacturers of storage batteries are represented: The Electric Storage Battery Co., Philadelphia; the Philadelphia Storage Battery Co., Philadelphia, and the Edison Storage Battery Co., Orange, N. J. The Electric Storage Battery Co., besides its chloride batteries used for stationary installations, exhibits its Ironclad Exide battery for electric vehicle propulsion and its type XC battery for automobile starting, lighting and ignition. The latest improvement in the XC type of battery relates to the cover construction, and this type is claimed to possess greater starting ability than any other type of equal weight, this being due to the unit cell construction.

Kansas City Dealers Start Tour

KANSAS CITY, MO., Oct. 16—The Kansas City Motor Car Dealers' Association started on its fifth annual trade tour at 7.30 a. m. October 15, when E. E. Peake, secretary, blew the whistle which started off the 34 machines. The tour is a 700 mile drive through southeastern Kansas and includes seventeen counties. All the cars were of the latest design and an added attraction was a fifteen-piece band and singer. Twenty-eight stops will be made. The return trip is through the famous trap shooter and Towanda oil sections. Several members of the Kansas Road Association accompanied the dealers. The tour will end Saturday, Oct. 20. Different cars for each day have been selected to act as pathfinder and pacemaker, an Olympian pathfinder and Buick pacemaker being drawn for the first day.

Highway Adds Heavy Trailers

EDGERTON, WIS., Oct. 15—The Highway Trailer Co., which has been delivering light two-wheel trailers, is now shipping heavy-duty trailers, the daily production being about five fifth-wheel semi-trailers and two four-wheel truck trailers.

Hartford Chicago Branch Moved

CHICAGO, Oct. 15—The Edward V. Hartford Co. has removed its Chicago branch from 2637 South Michigan Boulevard to 1716 Michigan Avenue.

Amazon Moves Its Branch

NEW YORK, Oct. 15—The Amazon Rubber Co. has removed its New York branch to Broadway and Seventieth Street. Owen Moynihan, eastern district manager, is in charge.

Newman to Handle All Armstrong Sales

NEWARK, N. J., Oct. 11—The entire sales of the Armstrong Rubber Co., Newark, will be handled by S. X. Newman at the executive offices in Rochester, N. Y. Newman is general sales manager.

Pittsburgh Annual Car Show in Full Swing

Will Last One Week—74 Factories Represented—Dealers Report Exceptional Business

PITTSBURGH, Oct. 15—Pittsburgh opened its annual show on Saturday evening and it will be brought to a close next Saturday. All told some 300 cars, representing some 74 different factories, are on display.

The Pittsburgh show attracts dealers from all the territory within from 50 to 60 miles of Pittsburgh, embracing Western Pennsylvania, West Virginia, and Eastern Ohio.

The market for cars in the Pittsburgh territory is exceptionally good. Almost every dealer, particularly those handling the better known cars, reports business far in excess of last year. Automobile registrations in Pennsylvania have already exceeded the 300,000 mark for 1917, and it is conservatively estimated that of this number at least 50,000 cars are owned within a radius of 35 miles of Pittsburgh. This is an increase of 25 per cent over the same period a year ago and the possibilities for next year cannot be computed. Pittsburghers want motor cars and are making enough money to satisfy that want.

The "Million-Dollar-a-Day" payroll in the Pittsburgh district, heralded far and near, has grown. War prosperity and the extra thousands of men and women now working have raised the figures over that amount. To-day, Pittsburgh is paying $1,500,000 each 24 hours to its working men and women, the highest figures ever reached in this section.

Pittsburgh's big banks, which handle the money that pays the workers, have compiled statistics for private use that show the enormous total paid workmen here each day. Ever since a year after the European war began, the $1,000,000 payroll, as it has been termed, has grown. Each pay-day saw a growth in the sum paid the workers. To-day the sum is the largest it ever has been and it is still growing. That it may reach $2,000,000 daily in the near future is the belief of several prominent bankers who are in touch with the situation.

War orders and orders that are superinduced by the war are responsible for the growth of industry here. Practically every shop, mill and factory, great and small, is working up to capacity—and where the output is below capacity it is because of scarcity of labor. The huge steel mills are working full shifts and are constantly demanding men, men and more men, and as they find their demands being filled the payrolls are growing in proportion.

The thousands of women who have taken up work since the war began have added enormously to the daily payroll demands. And another thing that has boosted the payroll considerably is the higher wage paid now for nearly all lines of work.

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Nation-Wide Used Car Show by Packard Men

Campaign, Planned By Factory, to Be Put On by Every Packard Dealer—The Plan

DETROIT, Oct. 13—The Packard Motor Car Co. will hold a national used-car sale, starting Monday, Oct. 15, and extending through Oct. 20. It is planned that the campaign will be staged by all Packard dealers at the same time, thus giving every dealer an opportunity to get the most out of the publicity and advertising that will be done.

This national used-car show plan is based fundamentally upon advertising plus certain other necessary arrangements as follows:

1. Muslin Advertising Banner
2. Newspaper Advertising (Display and Classified)
3. Newspaper Publicity
4. Direct-By-Mail Advertising
5. Street Car Advertising (Swinging Card Style)
6. Show-Room Arrangement
7. Show-Room Window Display
8. Salesmen's Appearance
9. Muslin Flag for Showroom
10. Report of All Prospects for Future Follow-Up
11. Car Tags

Not only is the Packard company suggesting that the dealers hold the used-car show—it is also showing exactly how the show should be staged. A sixteen-page prospectus has been issued and sent to each of the dealers, in which a complete outline of the method of staging the show is given. Specimen lay-outs of full page newspaper advertisements are given, together with a schedule in which the advertising should appear. The banners to be used are illustrated, as are the cards to be used in street cars and the bulletins to be issued describing the used cars.

Four follow-up letters to be sent to the prospects are illustrated and in every instance the dealer is shown exactly how to proceed with the used-car show. According to the experience of the Packard company, used-car sales are more readily made when each car bears a tag showing the make, year, model, type, capacity, general condition and condition of all the parts.

It is stated that these tags give the prospects the opportunity to inspect the models without the aid of the salesman and are thus enabled to make a decision for themselves without other sales effort.

Minneapolis in Liberty Drive

MINNEAPOLIS, Oct. 15—Half a million dollars will be raised by automobile men in Minneapolis in the second Liberty bond sale drive under direction of the Automobile Trade Association. Committees were appointed for each division of the industry, five in all. Besides $50,000 from the Studebaker branch, $25,000 from the Pence Automobile Co., $10,000 from the Wilcox Motor Co. and $10,000 from the association several subscriptions of $5,000 to $15,000 have been received at the start. One garage company will subscribe $100,000.

Record Chandler Shipments

CLEVELAND, Oct. 12—Chandler Motor Car Co. shipments up to Oct. 1 were close on to 14,000, or about 33 1/3 per cent ahead of a year ago. The output of 14,000 machines for 10 months compares with 13,073 for the full year 1916. To date Chandler has earned over $30 a share, and for the full 12 months profits are estimated between $2,300,000 and $2,500,000, or between $33 and $35 a share. Based upon an invested capital of $5,000,000 Chandler will have to pay in 1917 an excess profits tax of $800,000, which is the equivalent of slightly over $11 a share. So that final earnings for the 70,000 shares should be between $22 and $24 a share, or practically twice the $12 dividend.

Emerson Becomes Campbell

NEW YORK, Oct. 12—The Campbell Motor Car Co., a new corporation, will take over the assets of the Emerson Motors Co., according to a transfer signed by Judge Manton in the Federal District Court. This is in accordance with a plan of reorganization agreed to by Louis H. Moos, counsel for the stockholders of the Emerson corporation, against which they had filed a petition in bankruptcy. Since the petition in bankruptcy was filed against the company representatives of the stockholders and of the company have been working to reorganize it. As part of their plan, which will now be carried through as the result of Judge Manton's order, creditors are to receive payment in full in common stock and secured preferred stock in the new corporation. No more stock will be sold, according to the management.

Master Sells Its Carbureter Rights

DETROIT, Oct. 15—The Master Carburetor Corp. has sold the manufacturing rights of its carbureter to a new company, the Master Carburetor Co. of Los Angeles, Cal. A new company is being organized to sell primers and it will be called the Master Primer Co. of Detroit. E. T. Daniels, secretary and treasurer, is the only one of the old Master organization that will be continued in the latter company.

Grasser Turns to Trucks

DETROIT, Oct. 15—The Grasser Motor Co., of Detroit and Toledo, has taken over the Republic Motor Truck agency for Detroit, and the surrounding territory, and will switch their entire organization over to truck merchandising, instead of passenger cars as formerly. In the transfer, the plant and service station at 472 Lafayette Boulevard, west, has been taken over, and with it a large part of the sales and service organization. In the change, the Grasser Motor Co. gives up the Hupmobile agency in the Detroit territory and as yet no new agency has been named.

St. Louis Open House Sells a Lot of Cars

Dealers Are Satisfied With Sales But Not With Attendance—Truck Display Draws

ST. LOUIS, Oct. 15—The "open house week" of the St. Louis Automobile Manufacturers' and Dealers' Association was a success as far as arousing interest in the new models and selling of cars was concerned, but it was not such a success in the matter of drawing crowds to Motor Row. As one of the managing committee put it:

"The weather has been so beastly that we knew those who came out were interested or they would not have come. Indeed, only persons very much interested would venture out. The proportion of sales to visitors has been very great indeed."

Secretary R. E. Lee, of the association, who was manager of the "open house week," estimates that the sales averaged more than three to each dealer. In this he did not include the jobbing sales. These were considerable, as several of the local distributers had called their dealers in during the week to see the display of winter model cars.

As far as the fraternal features of the week were concerned, they were well carried out. Visitors to the showrooms were not approached until they indicated interest in the cars on display. The professional visitors were well received by those who were displaying competing lines.

The visiting was entirely after the dinner hour and all salesrooms were well lighted, tastefully decorated and open until 10 p.m. But there was not an evening of the week that was pleasant for motor car parties to come out.

The truck display, which was in an open street, was well visited. The trucks were moved about at request and there was considerable satisfaction with this feature of the display, much more so than any display under roof has ever caused.

Organize to Acquire Stewart Patents

NEW YORK, Oct. 12—National City Bank interests have organized a company to acquire the patents of Henry K. Stewart, one of the founders of the Stewart-Warner Speedometer Corp. The new concern, known as the Motor Starter Corp., was incorporated at Albany yesterday with a capitalization of $2,000,000. It will take over the Henry K. Stewart plant in Long Island City and will engage in the manufacture of starters and other electrical equipment. The directors of the new company are: Richard Delafield, Frank A. Vanderlip, president of the National City Bank, and Charles V. Rich and Samuel McRoberts, vice-presidents. Other directors include Sylvester W. Labrot, Charles P. Northrop, Eric P. Swenson, S. M. Swenson and Richard H. Williams.

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Engineers Plan Drive For Membership Boost

Proposed to Increase Membership to 8000 Within 2 Years—New Division Created

WASHINGTON, D. C., Oct. 15—The present membership of 3000 in the Society of Automotive Engineers is to be boosted to 5000, and it may be 8000 in the next 18 months or 2 years, according to plans decided upon to-day at the monthly meeting of the Council held in the Washington office in the Munsey Building. The new plan is to add to the membership roll the business heads of the majority of companies engaged in making automobile apparatus and parts and accessories for same. The present war has tied engineering, manufacture and business management so closely together that the work of the S. A. E. would be greatly strengthened by adding perhaps 1000 or more names of such business managers, presidents, financial men, etc. Christian Girl, of the Standard Parts Co., Cleveland, who is directing the production activities of the war truck for the Government, was the leading exponent of this extension of membership. He believes that the potency of the society can be greatly increased by increased membership and by greater interest of the financial and business heads of our industry.

Little Effect from Tax

DETROIT, Oct. 15—In practically every case, motor car manufacturers state that the 3 per cent tax has had but little effect on the industry, and are taking steps to have the dealer add the tax to the wholesale cost of the car in the same manner as is done with freight.

In some quarters, the fear is expressed that dealers may be prevailed upon by clever buyers to stand the tax personally. To prevent this, the Paige Motor Car Co. has sent a letter to all of its dealers, absolutely forbidding them to pay the tax themselves, and charging them to collect it from the purchaser. Included in this letter is a price list of all the Paige models, together with the amount of the tax in each case.

Other manufacturers state, that while the tax might slow up business slightly, the effect would not be permanent, and they too are passing the tax on to the consumer in accordance with the law.

In fact, realization that the tax is a necessary war measure, and realization that the dealer must collect all of the tax from the purchaser, and not attempt to stand even part of it himself, seems to sum up the attitude of the manufacturers.

One manufacturer that is to announce a new model in about a month states that the advertising on the new car will contain the list price of the car, and a separate item will show the amount of the war tax—stating that that amount is a war tax, and must be paid by the purchaser. This will tend to impress upon the public that they must pay the tax, and prevent them from attempting to get the dealer to stand the tax.

See New Overland Car

TOLEDO, Oct. 15—Several hundred Overland dealers visited the Overland plant last week to view the new small car which was announced in Motor World last week. Future business policies were discussed.

Drysdale Leaves Cadillac to Take Up Tractors

DETROIT, Oct. 13—K. P. Drysdale, who for the past 12 years has been advertising manager of the Cadillac Motor Car Co., has been appointed director of sales promotion for the Cleveland Tractor Co., Cleveland, and has resigned from the Cadillac company. He assumed his new position Oct. 16. The Cleveland Tractor Co. is manufacturing a creeper type tractor designed by Rollin White, formerly of the White Motor Co. It is stated that the capacity of the present tractor plant is overtaxed and that larger buildings are to be erected in the near future. The capitalization of the company has recently been increased from $600,000 to $6,000,000.

Redden and Commercial Combine

JACKSON, MICH., Oct. 15—The Redden Motor Truck Co. and the Commercial Car units, a Philadelphia company which manufactures the Truckston unit for Ford cars, has combined. The new organization has $1,000,000 capital and combines, it is stated, the Cook, Lacoin and Scott patents. For the present the Redden units will be manufactured in the Jackson plant and the Commercial car units will be manufactured in Philadelphia. In the combination of the two interests Charles F. Redden, president of the Redden company, has sold his holdings and resigned.

Dorris Adds to Capital

ST. LOUIS, MO., Oct. 15—To handle increased production and to carry on a more comprehensive manufacturing program the Dorris Motor Car Co. has increased its capital from $330,000 to $1,000,000. H. B. Krenning, who has been president since the company was organized in 1905, has retired, and W. L. Colcord, of the Colcord-Wright Mach. Co., of this city, has succeeded him. G. P Dorris, vice-president and engineer, continues in this dual capacity. H. Leathers, a new man in the company, is treasurer.

Olympian Adds Enclosed Models

PONTIAC, Oct. 15—The Olympian Motor Co. is bringing out three styles of closed cars, including a sedan, Springfield type, coupe and winter detachable top. The Olympian company has given special attention to finish, trimmings and upholstery. The doors on all models are wide and the cars are roomy.

General Motors Earned $3,225,000 Last Month

Increase of 46 Per Cent Over September, 1916, Revealed—3,850 More Cars Sold

NEW YORK, Oct. 12—Undivided profits of $3,225,000 were made by General Motors in September, compared with $2,200,110 in the same months of 1916, an increase of $1,024,890, or 46.5 per cent. The number of cars and trucks sold last month was 16,023, compared with 13,880 in September, 1916, an increase of 3043. Net sales for September totaled $16,850,000, against $11,557,061 a year ago, an increase of $5,292,939. Cash in the bank and sight drafts with documents attached at the close of business Oct. 8, 1917, amounted to $22,043,500. The results of September, compared in tabular form with September, 1916, are as follows:

	Sept., 1917	Sept., 1916	Increase
Cars and trucks sold	16,023	13,880	3043
Net sales	$16,850,000	$11,557,061	$5,292,939
Undivided profits	3,225,000	2,200,110	1,024,890

Profits of $3,225,000 for General Motors in September are equal to 3.9 per cent for the month on the common stock outstanding. August profits were reported as $3,150,000, an increase of 45 per cent over August, 1916, and equal to 3.8 per cent on the common stock. Thus in August and September, the first 2 months of the new fiscal year, the company has earned a surplus equal to 7.7 per cent on its common stock, or almost two-thirds of the entire year's dividend requirements at the present 12 per cent rate.

Cadillac Prices Adjusted

DETROIT, Oct. 16—The Cadillac Motor Car Co. has revised the prices of its line as follows:

Model	Old Price	New Price
Seven-passenger phaeton	$2,590	$2,805
Roadster	2,590	2,805
Victoria convertible	3,075	3,205
Brougham	3,535	3,650
Town limousine	4,100	4,160
Town landaulet	4,250	4,310
Limousine	4,085	4,145
Imperial	4,285	4,345
Landaulet	4,235	4,295
125-in. chassis	2,295	2,340
145-in. chassis	....	2,345
132-in. chassis	2,375	2,526
145-in. chassis	2,415	2,465

These new prices include the regular standard equipment, f.o.b. Detroit. The purchaser pays the war tax in addition.

Missouri Has 144,465 Cars

ST. LOUIS, Oct. 15—The State License Bureau announces that 144,465 automobiles have been licensed this year, 4097 motor cycles and 1341 dealers in automobiles. St. Louis has 27,279 of the total of cars. Kansas City has 16,649.

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Prominent Tradesmen Assume New Duties

Resignations and Promotions Place Workers in New Places

George H. Caine, foreman of the Willys-Overland Inc. heavy machinery department, has received his appointment as captain in the government aircraft production board. He was formerly connected with the Cadillac Motor Car Co. of Detroit and leaves immediately to assume his new duties.

E. W. Tracy of the Premier Motor Corp. has joined the production department of the United States Army under Christian Girl. He was formerly director of purchases.

Guy W. Morgan has joined Christian Girl in the truck department of the United States Army at Washington. He was formerly president of the Abbott Corp.

M. S. Cooper, formerly manager of the commercial car division of the Willys-Overland Inc., has joined the quartermaster's department and will be captain in charge of transportation and transports.

L. E. Blocker has joined the sales force of the Liberty Motor Co. He was formerly with the Chalmers Company and before that with the E. R. Thomas-Detroit Co.

Edmund B. Siegerson, former branch manager at Albany and Buffalo for the Goodyear Tire & Rubber Co., and later supervising the sales promotion work through the mid-West, has been made sales promotion manager for the McGraw Tire & Rubber Co., with headquarters at East Palestine, Ohio.

Ed. L. Vail has been temporarily released from having charge of the automobile department of the Waltham Watch Co. and has received a commission of first lieutenant in the aviation section of the army and has been assigned for duty in the airplane engineering section. Frank T. Day, who has been in the merchandising end of the Waltham Company, has taken up Lieutenant Vail's work.

R. T. Hodgkins, general sales manager of the Studebaker Corp., has just returned to assume his duties following an absence of three months, during which time Mr. Hodgkins served as a lieutenant in the navy. He was released from war duty because of the importance of his commercial duties.

Lloyd P. Jones, former sales manager of the Federal Brass Works, has been appointed vice-president and general manager of the company.

Floyd L. McMurray has been added to the sales force of the Hippodrome Motor Co., Nashville, having been transferred from the service department.

M. J. Monson, formerly manager of the Milwaukee branch of the Buick Motor Co. and more recently head of the Monson-Inbusch Buick Co., Milwaukee, has accepted the position of territory manager of the Alfred Reeke Co., 455-459 Broadway, Wisconsin distributer of Nash cars and trucks.

Frank X. Hufschmidt, for many years manager of the Milwaukee branch of the Parke-Davis Co., Detroit, has become associated with the retail sales department of the Hoppe-Hatter Motor Co., 485-487 Milwaukee Street, Milwaukee, distributer of the Paige in Wisconsin and Upper Michigan.

D. V. Kennedy, who has been representing the Perfex Radiator Co., Racine, Wis., in the Detroit territory, has been transferred to the headquarters office in Racine and will devote his attention mainly to the tractor trade.

Hi Sibley, who has been special representative for Motor World in Europe, on the Mexican border and in Japan, is now publicity manager for the Republic Motor Truck Co., Alma, Mich.

George L. Parker, recently of Boston, has joined the sales force of the Cadillac Automobile Co., St. Louis.

E. R. Shade, of the Apperson factory, has been made service manager for the J. W. Leigh Motors Co., Apperson distributer, St. Louis.

Frank Kreviing, for several years on the staff of the Packard Missouri Motor Car Co., has joined the force of Harry Newman, Inc., Kissel distributer, of that city.

Frederick S. Lawrie, sales agent, 910 Merchants Bank Building, Indianapolis, handling factory accounts on special automotive material, has just been commissioned a captain in the Ordnance Section, Officers Reserve Corps of the United States Army, and will leave for active service as soon as assigned.

F. H. Akers, who for the past five years has been in the employ of the Reo Motor Car Company as factory representative covering the central western states, has been appointed assistant sales manager, the appointment taking effect October 15.

E. A. Haskins has become assistant to the chief engineer and superintendent of service of the United States Motor Truck Co. He was formerly factory manager of the Detroit Motor Truck Co. and before that service manager of the Federal Motor Truck Co. He will take up his new duties between Nov. 1 and 15.

D. M. Trombley, district sales manager in the northwest for the Premier Motor Corp., has resigned but as yet has made no announcement of his future connection.

W. K. Webber has been appointed general eastern traveling sales manager of the Wallace C. Hood Service Bureau. He was formerly sales manager of the Conley & McElroy Machinery & Engineering Co., in Detroit.

C. F. Johnson, formerly carburetor engineer with the Cadillac Motor Car Co., has joined the Johnson Co., Detroit, in the same capacity.

William S. French has been appointed director of sales for the Monarch Governor Corp. He was formerly advertising manager of the Denby Motor Truck Co.

Paul D. Burrees, former factory representative of the Maxwell Motor Co., is now serving the government as inspector at Kenosha, Wis.

W. H. Cook, who has been manager of the Supreme Motor Co., St. Louis, has resigned to organize the C. & H. Motor Co., which will distribute a car new to the St. Louis territory.

G. A. Vorhour succeeds W. H. Broadwell as service manager for the Harry Newman, Inc., Kissel distributer in St. Louis.

George A. Taylor, St. Louis, has been added to the sales staff of the International Mack Corp., St. Louis.

M. W. Mosta, formerly with the Continental Motor Co., has joined the engineering staff of the Curtiss Airplane Co.

E. M. Delling has been promoted to chief of the inspection department of the Saxon Motor Co. Delling was formerly with the Mercer Automobile Co., at Trenton, N. J.

Harry Hamilton, assistant purchasing agent of the Dayton Engineering Laboratories Co., Dayton, has become purchasing agent for the Dayton-Wright Airplane Co. He is succeeded at the Delco factory by Bert Hutchins, who in turn is succeeded by J. B. Shephard.

O. S. Beroth has resigned as assistant purchasing agent for the National Motor Car & Vehicle Corp., Indianapolis, to become manager of the service department of the Indiana Truck Corp., Marion, Ind.

Wallace C. Hood has become manager of the King Motor Car Co., Detroit. He will continue as president of the Wallace C. Hood Service Bureau in Detroit. Frank M. Eldrege, secretary and treasurer, will become general manager of the bureau.

Homer McKee, advertising manager of the Premier Motor Corp., has opened an advertising agency in this city under the style The Homer McKee Co., Inc. Mr. McKee is president, Aaron Wolfson is vice-president, and F. H. Hoover is secretary and treasurer.

Horace DeLisser of the Ajax Rubber Co. has been appointed to Gen. Pershing's business men's staff. He will have the rank of major and will help construct factories behind the fighting lines in France.

W. H. P. Reilly of the Ajax Rubber Co. has been appointed Pacific coast sales manager, with headquarters at San Francisco.

Leo C. Gansler, formerly of the F. E. Murphy Auto Co., Minneapolis, Minn., has become manager of the used car department of the Hoppe-Hatter Motor Co., Milwaukee, state distributer of the Paige.

Harry W. Miller, formerly service manager of the Chalmers Motor Co., has been promoted to assistant sales manager and service supervisor.

Fred W. Fischer has just joined the sales department of the H. Barcroft White Corp., Syracuse, N. Y., distributers of Nash passenger cars and Chevrolet cars.

F. E. Anderson has been appointed salesmanager for the H. H. Schusler Co., Pittsburgh Marmon distributer. He was formerly associated with the Franklin Pittsburgh Co.

Edward Hobbs, who was formerly in the automobile department of the Pittsburgh Press, has associated himself with the Yost Auto Co., Pittsburgh Crow-Elkhart and Moon distributers.

Grover C. Davis, salesmanager of the J. B. Van Wagener Automobile Co., Pittsburgh, has taken a position with the Westcott Motor Car Co. He will cover an eastern territory.

George Beverley, Spokane, has been appointed manager of the Scripps-Booth Distributing Co., Spokane. He was formerly sales manager of the Herman J. Rossi Co., of Wallace, Idaho agents for Scripps-Booth and Moon.

Walter G. Jarmen has been appointed sales manager of the Jackson Automobile Co. He was formerly treasurer of the Canadian Briscoe Motor Co.

R. T. Yeats has resigned as director of sales and exports for the Detroit Motor Car Co., but has as yet made no announcement of his future plans.

W. A. Booth of the Standard Steel Tube Co. has been appointed manager in charge of the Detroit Office.

Charles E. Davy, formerly general superintendent of the United States Motor Truck Co., Cincinnati, has become experimental engineer of the Denby Motor Truck Co.

W. R. Averill, formerly connected with the sales department of the Burroughs Adding Machine Co., the Dictaphone Co. and the Packard Co., has been appointed sales manager of the Thompson Auto Co., distributers of Federal trucks in the Detroit territory.

E. A. Callahan, assistant manager of the Omaha branch of the Willys-Overland Co., and formerly with the purchasing department at the factory, has been appointed a captain, and according to reports will be connected with Major H. L. Sheppler in the airplane production department.

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Car Sales in Georgia Way Over Last Year

Licenses Are 20,000 Ahead of Last Year—Repair Shops Prosperous —Used Cars Move

SAVANNAH, GA., Oct. 13—What better evidence of abounding prosperity could be offered than the fact that 20,000 more automobile license tags have been sold in Georgia up to the present date than were sold in the same period last year?

Georgia's tags are issued annually and run with the calendar, from Jan. 1 to Dec. 31. Up to the present time last year the secretary of state had sold 43,000 license tags. Up to the present date he has sold 65,000, and the applications are still rolling in.

That the South is prosperous is admitted, and that a considerable proportion of the new wealth is going into the purchase of motor vehicles is also indisputable. The utility car is more in demand than the luxury car. The farmers are buying more readily than are the city folks.

This unusual demand for cars has resulted in an advance on repair work. Practically all garages have announced an increase of 10 cents per hour. Garagemen state that it has become impossible to make a living at prevailing prices. There has been no advance on repair work since the war started, but there has been an advance in salaries several times, due to the increasing cost of living.

While the raise will not affect any one very materially, it will have considerable effect in the total volume of cash to the garagemen. The increase announced is considered very slight in comparison with the inflation of values in other lines.

The garagemen state that they were unable longer to hold their mechanical forces at prevailing prices, due to the demand of the government for expert drivers and repairmen. Nearly every man who can drive a car can get into the automobile or truck branch of the service. The work is more varied than the ordinary routine work engaged in and is therefore more to be desired. Many men are also being accepted as mechanics. A great force of such men is being recruited at Macon.

The used car continues to be a feature in the market. There has been a remarkable increase in the demand for such cars. Used cars are bought at whatever figure they can be secured, are then repainted and worked over, and resold at a profit. Hundreds of people are buying used cars because they are cheaper, and in many instances they can get almost as much service out of them as they could out of new cars.

So confident are the dealers of a record-breaking business this fall and winter that a number of them are enlarging their display rooms and exhibition space in order to accommodate a larger number of cars at a time, thus lessening the chance of failure to make a trade because of inability to deliver. Such improvements are general throughout the industry.

The transportation problem has solved itself to a large extent. Dealers are no longer complaining so bitterly about non-delivery of shipments. If conditions continue to improve in the same ratio for the next several weeks dealers will be ready for the fall rush, which is due to start as soon as the farmers begin to market their crops in volume.

Dealers Start Drive For Liberty Bonds

NEW YORK, Oct. 16—The New York dealers have been asked by the Liberty Loan Association to raise $100,000,000. Led by Horace De Lisser, chairman, the Advisory Trades Committee of the Liberty Loan Committee of Automobile and Allied Trades, has been formed. This committee was formed Oct. 1 and consists of Horace De Lesser, Ajax, chairman; Harry Houpt, Hudson, vice-chairman; Charles Stewart, Automobile Dealers' Association, secretary; Edgar Storms, Racine Tire, director of speakers; and Duncan Curry, New York American, publicity member. Other members of the committee include I. M. Uppercux, Cadillac; C. H. Larson, Olds; C. M. Brown, Winton; and C. N. Bishop, of Bishop, McCormack & Bishop. It has been arranged so that the employees of garages, accessory houses, etc., will be able to help in the Liberty Loan subscriptions. Each company has been given cards or subscription blanks with punch marks for $1 a week payments for bonds of $50 or $100 denominations.

CHICAGO, Ill., Oct. 16—The motor car trade in Chicago as represented by the Chicago Automobile Trade Association has started a campaign for the second issue of Liberty Bonds. During the first day $100,000 worth of bonds were sold among less than twenty members. The drive started with a mass meeting addressed by Chicago's "Four-Minute Men" and opened by the Naval Training Stations Marine Band. Most of the firms in the association appointed committees in their establishments and it is expected the contributions of the trade will be very large.

Closed-Car Show Stimulates Business

BUFFALO, N. Y., Oct. 15—As a result of the closed-car show held here the first week in October practically all the dealers who exhibited are high in their praise of its success and of the amount of business that has come out of the exhibition. Joe Rath, Chevrolet dealer, announced that five out-of-town dealers called at his store begging immediate deliveries of the Chevrolet sedan. Klepfer Brothers, Buick distributers, also claim an unusual amount of business.

May Release Burton Process for Gasolene

Independent Refiners Believe Prospects are Bright for Standard to Let Them Use it

CHICAGO, Oct. 16—Apparently, agitation and the appeal of the Government to increase the supply of gasoline during the period of the war are beginning to bear fruit. Development indicates that the Standard Oil Co. of Indiana, which holds the Burton process of pressure distillation by which the gasoline is greatly increased, may release this process to independent refiners. Standard Oil officials, however, will not comment on the situation, but prominent independents feel that the prospects are bright for the accomplishment of this result.

According to the majority of the independents, these companies are so situated that the Burton process can be incorporated in their refineries by a slight addition to present equipment. There have been reports that the Standard Oil Co. has made tentative proposals to some independent refineries for the use of the process. But in one case the royalty was prohibitive and in another the stipulation was that the independents must not use the process in a section where the Standard Oil Co. is operating.

One of two things will happen if the process is released for general use. The present supply of gasoline would be practically doubled, probably resulting in the reduction of prices, or less crude would be worked, conserving the supply, which in turn would tend to prevent an increase in prices.

An analysis of the gasoline situation at present shows that more crude is being worked than produced. In ordinary refining, about 25 per cent lubricating oil is produced and 20 per cent gasoline, and, allowing 5 per cent waste, there remains 50 per cent of residual fuel oil, a heavy product which still contains a certain percentage of gasoline.

With the Burton process it is possible to break up or brack this heavy substance so that an additional 20 per cent of gasoline is secured. It is stated that the general use of the Burton process might mean a total increase of about 75 per cent in gasoline production.

Chicago Used Car Sale

CHICAGO, Oct. 16—A concerted drive to move used cars accumulated during the late summer is being made this week by Chicago dealers. They have designated a section of the row as the motor car center and the dealers in this vicinity are co-operating in their advertising and sales. Cars are specially priced and are sold on terms. Each show room is open until 10.30 at night. Among the dealers who are interested in the sale are Dodge, Oakland, Stearns, Hudson, Elgin, Maxwell, King, Overland, Marmon, Owen-Magnetic, Raush and Lange, Detroit Electric, Pierce-Arrow, Winton, and Ford.

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Specifications of the Leading Cars

MOTOR WORLD GUIDE

Revisions Are Made in Table Every Week

Model	Motor	S. A. E.	Ignition	Carburetor	Starter	Clutch	Gearset	Wheelbase	Tires	Rims	2-Passenger	5-Passenger	7-Passenger	Coupe	Sedan	Limousine	Detachable Top
ABBOTT																	
6-44	6-3½x4½	25.3	Remy	Stmbg	Remy	DP	3	122	32x4	SS	1295	†1295	1295	....	1920	....	....
6-60	6-3½x5½	29.4	Remy	Stmbg	Remy	DD	3	122	34x4	SS	1595	....	1595	2150	2150	....	....
ALLEN																	
Classic	4-3½x5	22.5	Wsths	Stmbg	Wsths	C	3	112	32x3½	SS	†1095	1095	....	....	1395	....	....
AMERICAN-SIX																	
A	6-3½x5	21.6	G & D	Zenith	G & D	D	3	122	32x4	SS	....	1375	....	....	....	....	....
ANDERSON																	
Six-40	6-3½x4½	25.4	Conn	Zenith	Wsths	DP	3	120	33x4	SS	....	1395	....	....	2165	....	....
APPERSON																	
6-17	6-3½x5	29.4	Remy	Rafid	Bijur	DP	3	130	34x4	SS	†1990	1930	1990	....	....	....	....
8-17	8-3½x5	33.8	Remy	Johnson	Bijur	DP	3	130	35x4½	SS	†2250	....	2250	....	....	....	....
AUBURN																	
6-39	6-3½x5	23.4	Remy	Rafid	Remy	DP	3	120	34x4	SS	1195	1195	*1220	....	....	....	1380
6-44	6-3½x5½	29.4	Delco	Rafid	Delco	DP	3	131	35x4½	SS	....	†1635	1635	....	....	....	1985
AUSTIN																	
Hy-King	12-2½x5	39.6	Delco	Stmbg	Delco	D	6	142½	34x4½	QD	3750	3750	4000	4550	4950	5250	....
BIDDLE																	
D	4-3½x5½	23.5	Dixie	Zenith	G & D	DP	4	122	32x4	QD	2300	2350	†2375	....	....	3900	3900
BOUR-DAVIS																	
17	6-3½x4½	25.3	Remy	Stmbg	G & D	DP	3	118	32x4	QD	....	1385	....	....	....	....	....
BREWSTER																	
	4-4 x5½	25.6	Bosch	Zenith	U.S.L.	C	3	125	34x4½	SS	†6500	....	....	....	7500	7700	....
BRISCOE																	
B4-24	4-3 7/16x5½	16.3	Conn	Buick	A-Lite	C	3	104	30x3½	C	725	725	....	....	....	....	850
BUICK																	
D 4-34-35	4-3½x3½	18.2	Delco	Marvel	Delco	DD	3	106	31x4	C	795	795	....	....	....	....	....
D-44-47	6-3½x4½	27.3	Delco	Marvel	Delco	DD	3	118	34x4	SS	1265	1265	....	‡1695	1795	....	....
E-49	6-3½x4½	27.3	Delco	Marvel	Delco	DD	3	124	34x4½	SS	....	....	1495	....	2175	....	....
CADILLAC																	
57	8-3½x5½	31.2	Delco	Own	Delco	D	3	{132 / 125	35x5 / 34x4½	SS			2805	....	3205	4145	....
CASE																	
T17	4-3½x6	21.0	Conn	Rafid	A-Lite	C	3	120	34x4	SS	†1190	....	1190	....	....	....	....
U	6-3½x5½	28.4	Wsths	Rafid	Wsths	P	3	125	35x4½	....	....	....	1875	....	....	....	....
CHALMERS																	
6-30	6-3½x4½	25.4	Remy	Stmbg	Wsths	DP	3	{117 / 122	32x4 / 34x4	SS	1250	1250	1350	1635	1850	2025	....
CHANDLER																	
17	6-3½x5	29.4	Bosch	Rafid	G & D	D	3	123	34x4	SS	1595	....	1595	2195	2295	2395	....
CHEVROLET																	
490	4-3½x4	21.7	Conn	Zenith	A-Lite	C	3	102	30x3½	C	635	635	....	....	1060	....	....
FA-5 FA-2	4-3½x5½	21.7	Remy	Zenith	A-Lite	C	3	108	32x4	SS	935	935	....	....	1475	....	....
D	8-3½x4	36.45	Remy	Zenith	A-Lite	C	3	120	34x4	SS	1385	1385	†1385	....	{2495 / 2695}	....	....
COLE																	
860	8-3½x4½	39.2	Delco	Stmbg	Delco	C	3	127	35x4½	SS	†1995	....	1995	2495		....	....
COLUMBIA																	
	6-3½x4½	25.3		Stmbg	W.Lnrd	DP	3	115	32x4	....	†1450	1295	1295	....	1995	....	....
COMMONWEALTH																	
Ultra 4-40	4-3½x5	19.6	A.Kent	Carter	Dyneto	DD	3	110	32x3½	C	†975	965	....	....	....	....	....
CROW-ELKHART																	
CE-33-35	4-3½x5	19.6	Conn	Carter	Dyneto	D	3	114½	32x3½ 31x4	SS	†995	995 935	....	....	1195	1275	....
DANIELS																	
B	8-3½x5	33.8	Wsths	Zenith	Wsths	D	3	127	34x4½	QDR	‡3100	3100	3100	....	....	....	....
DARLING																	
130	6-3½x5½	2.4	A.Kent	Stmbg	Bijur	DD	3	130	33x4½	SS	2250	2250	2250	....	....	....	....
DAVIS																	
H & I	6-3½x4½	25.3	Delco	Stmbg	Delco	C	3	119	34x4	....	1295	1295	1295	1695	1795	....	1985
J	6-3½x5½	29.4	Delco	Stmbg	Delco	C	3	124	34x4½	....	....	1595	1595	....	....	....	....
DETROITER																	
6-45	6-3½x4½	25.3	Conn	Ball	A-Lite	D		119	33x4	SS	‡1295	1395	†1425	....	1875	....	....
DISPATCH	4-3½x5	22.5	Bosch	Rafid	U.S.L.	G	4	120	36x3½	QD	1135	....	1210	1400	....	....	....
DIXIE FLYER																	
LS35	4-3½x5	16.9	Conn	Carter	Dyneto	D	3	113	32x3½	SS	†895	895	....	....	1295	....	....
DOBLE	2-5x4	....	Own Dobl	Stmb	Wagner			135	35x5	....	....	....	2500	....	....	....	....
DODGE BROTHERS																	
	4-3½x4½	24	Delco	Stewart	N.E.	D	3	114	32x3½	SS	835	835	....	1365	1265	....	1000

Model	Motor	S. A. E.	Ignition	Carburetor	Starter	Clutch	Gearset	Wheelbase	Tires	Rims	2-Passenger	5-Passenger	7-Passenger	Coupe	Sedan	Limousine	Detachable Top
MADISON																	
4	.....	....	.....	.....	.....	..	.	120	34x4	..	....	....	....	....	....	....	....
	6-3½x5	23.4	Remy	Rafid	Remy	DD	3	115	34x4	SS	†1285	1285	1375	....	....	....	....
MAIBOHM																	
A	4-3½x4	15.6	A.Kent	Zenith	Disco	DD	3	105	30x3½	C	795	....	....	....	....	....	....
MARION HANDLEY																	
6-40	6-3½x5	23.4	Wsths	Stmbg	Wsths	DD	3	120	32x4	SS	†1350	....	1350	....	....	....	....
6-60	6-3½x5½	29.4	Wsths	Stmbg	Wsths	DD	3	125	35x4½	SS	†1650	....	1650	....	2350	....	....
MARMON																	
34	6-3½x5½	33.7	Bosch	Stmbg	Bijur	C	3	136	32x4½	QD	....	3550	....	....	....	....	....
MAXWELL																	
25	4-3½x4½	21	A.Kent	K D	Simms	C	3	109	30x3½	C	‡745	745	....	1095	1095	1095	855
McFARLAN																	
	6-4½x6	48.6	Mag'to	Stmbg	Wsths	DP	3	136	35x5	QD	3500	3500	3500	....	4600	4650	....
MERCER																	
22-73	4-3½x6½	22.5	Bosch	Zenith	U.S.L.	DD	4	132	34x4½	QD	†3500	*3500	....	....	....	....	....
22-73	4-3½x6½	22.5	Bosch	Zenith	U.S.L.	DD	4	115	32x4	QD	3400	Racebout	3250	....	....	....	....
METZ																	
25	4-3½x4	24	A.Kent	A.W.T.	Wsths	F	.	106	32x3½	C	650	650	....	....	....	....	....
MITCHELL																	
D-40	6-3½x5	25.4	Conn	Rafid	Splitdf	C	3	120	32x4	SS	1250	1250	....	....	....	....	300x
C-42	6-3½x5	29.4	Conn	Rafid	Wsths	C	3	127	34x4	SS	‡1490	1510	1525	2060	2240	2350	300x
MOLINE-KNIGHT																	
C	4-3½x5	22.5	Conn	Schebler	A-Lite	C	3	118	34x4	SS	†1495	1495	....	....	....	....	....
G	4-4 x6	25.6	Conn	Schebler	A-Lite	C	3	122	35x4½	SS	†1840	....	1840	2490	2440	....	....
MONITOR																	
C-R	4-3½x4½	22.5	Heinse	Schebler	Heinse	D	3	110	32x3½	SS	995	995	....	....	....	....	....
N-O	6-3½x4½	25.4	Heinse	Stmbg	Heinse	D	3	117	33x4	SS	1195	1195	....	....	....	....	....
MONROE																	
M-3	4-3 x4½	14.4	Conn	Zenith	A-Lite	DD	3	96	30x3	QD	565	‡535	....	....	965	....	....
M-4	4-3½x4½	16.9	Conn	Zenith	A-Lite	DD	3	115	32x4	QD	....	1095	....	....	....	....	....
MOON																	
	6-3x4½	19.8	Delco	Titan	Wagner	DP	3	114	32x3½	..	....	1095	....	....	....	....	....
6-45	6-3½x4½	25.3	Delco	Rafid	Delco	DD	3	118	34x4	SS	‡1575	....	1575	....	....	....	....
6-66	6-3½x5½	29.4	Delco	Rafid	Delco	DD	3	125	35x4½	SS	†1850	....	1850	2450	2450	....	....
MURRAY																	
70-T	8-3½x5	33.8	Dixie	Zenith	Wsths	DP	3	138	34x4½	..	2300	....	2300	....	....Chassis		2300
NASH																	
671	6-3½x4½	29.4	Delco	Rafid	Bijur	DP	3	125	34x4	SS	....	....	1465	....	....	....	....
681-684	6-3½x5	25.4	Delco	Marvel	Delco	P	3	121	34x4	SS	....	1395	....	....	1985	....	....
NATIONAL																	
Six	6-3½x5½	29.4	Dixie	Rafid	Wsths	C	3	128	34x4½	QDR	†1995	†1995	1995	2645	2820	....	....
Twelve	12-2½x4½	39.7	Delco	Rafid	Bijur	C	3	128	34x4½	QDR	†2595	†2595	2595	3345	3420	....	....
NELSON																	
	4-3½x4½	15.6	Bosch	Zenith	U.S.L.	D	3	104	32x4	SS	1200	†1400	....	....	1800	....	....
OAKLAND																	
34	6-3½x4½	19.0	Delco	Marvel	Delco	C	3	112	32x4	SS	‡945	945	....	....	....	....	....
50	6-3½x4½	29.2	Delco	Stmbg	Delco	C	3	127	34x4½	SS	....	....	1695	....	....	....	....
OLDSMOBILE																	
45	8-2½x4½	26.4	Delco	Johnson	Delco	C	3	120	34x4	SS	....	....	1467	....	....	....	....
37	6-3½x4½	18.9	Delco	Johnson	Delco	C	3	112	32x4	SS	†1185	1185	....	1595	1695	....	....
OLYMPIAN																	
	4-3½x4½	27	Conn	Carter	A-Lite	D	3	114	32x3½	....	†965	965	....	....	....	....	....
OVERLAND																	
85B4	4-4½x4½	27.2	Conn	Titan	A-Lite	C	3	112	32x4	SS	‡890	895	....	1250	1450	....	....
90	4-3½x5	18.2	Conn	Titan	A-Lite	C	3	{104 / 106}	31x4	C	735	750	†795	1385	1585	....	....
OWEN-MAGNETIC																	
M-25	6-3½x5½	29.4	Bosch	Zenith	O-M	OM	6	125	34x4½	SS	....	3300	....	3650	....	4250	....
O-36	6-3½x5½	33.6	Bosch	Zenith	O-M	OM	6	136	35x5	SS	‡2950	†2950	2950	....	....	5000	....
PACKARD																	
3-35								{136					4100			5550	
3-25	12-3 x5	43.2	Delco	Own	Bijur	DD	3	128	35x5	QD	....	3700	3700	5050	....	5250	....
PAIGE																	
6-39	6-3½x5	23.4	Remy	Stmbg	G & D	D	3	117	32x4	SS	1330	1330	....	....	1925	....	....
6-46	6-3½x5½	29.4	Remy	Rafid	G & D	D	3	124	35x4½	SS	....	....	1450	....	....	....	....
6-51	6-3½x5½	29.4	Remy	Rafid	Remy	D	3	127	35x4½	SS	†1895	....	1695	....	....	....	....
6-55	6-3½x5½	29.4	Remy	Rafid	Remy	D	3	127	35x4½	SS	....	....	1775	2850	....	3250	....

*6-passenger. †4-passenger. ‡3-passenger.

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DORRIS																		
L-C-6	6-4 x5	38.4	Bosch	Stmbg	Wsths	D	3	130	36x4½	SS	....	....	2785	3325	3350	4150	....
DORT																		
9	4-3½x5	16.9	Conn	Carter	Wsths	C	3	105	30x3½	QD	‡725	725	....	....	1095	....	845
ELCAR																		
D.F.	4-3½x5	19.6	Delco	Carter	Dyneto	DP	3	115	32x3½	SS	845	845	†845	....	....	....	....
ELGIN																		
	6-3 x4½	21.6	Remy	Stmbg	Wagner	DP	3	116	33x4	..	†1095	1095	....	1645	....	....	....
EMPIRE																		
50-51	4-3½x5	24.0	Conn	Stmbg	A-Lite	DP	3	115	33x4	SS	1165	1125	....	....	....	....	....
70-A	6-3½x4½	25.6	Conn	Stmbg	A-Lite	DP	3	120	34x4	SS	†1345	1345	1385	....	1625	....	....
FIAT																		
55	4-5½x6½	42	Bosch	Zenith	Wsths	D	4	140	35x5	QD	....	....	5500	....	....	6500	....
FORD																		
T	4-3½x4	22.5	Own	{Holly Kngstn	....	D	2	100	30x3½rC		350	365	....	560	695	....	....
FRANKLIN																		
9	6-3½x4	25.3	A.Kent	Own	Dyneto	D	3	115	{32x4 33x4}	SS	2000	2050	....	2850	2950	3200	....
GLIDE																		
6-40	6-3½x5	23.4	Wsths	Rafid	Wsths	D	3	119	34x4	SS	....	1395	....	....	1595	....	....
GRANT																		
K	6-3 x4½	21.6	Remy	Stmbg	Wagner	C	3	112	32x3½	..	‡875	875	....	....	....	....	....
HAL TWELVE																		
	12-3½x5	39.7	....	Stmbg	Wsths	DP	3	135	34x4½	SS	2600	†2600	2800	....	3500	4500	....
HALLADAY																		
S	6-3 x5	21.6	A-Lite	Stmbg	Wsths	D	3	118	33x4	SS	‡1185	1150	....	....	....	....	....
R	6-3½x5	23.4	Wsths	Stmbg	Wsths	D	3	122	34x4	SS	1385	1385	....	....	....	....	....
HARROUN	4-3½x5½	16.9	A.Kent	Stmbg	Remy	C	3	106	30x3½	..	....	785	....	....	....	....	....
HAYNES																		
36	6-3½x5	29.4	Remy	Rafid	L-N	DP	3	121	34x4	SS	....	1595	....	....	2260	....	....
37	6-3½x5	29.4	Remy	Rafid	L-N	DP	3	127	35x4½	SS	†1725	....	1725	....	2390	....	....
40	12-2½x5	36.3	Delco	Rafid	L-N	DP	3	121	34x4½	SS	....	2095	....	....	2760	....	....
41	12-2½x5	36.3	Delco	Rafid	L-N	DP	3	127	34x4½	SS	†2225	....	2225	....	2890	....	....
HOLLIER																		
186	6-3 x4½	21.6	Remy	Stewart	Apico	C	3	116	32x3½	SS	....	1085	....	....	....	....	....
178	8-3 x4½	28.8	A.Kent	Stewart	Apico	C	3	116	34x4	SS	†1285	1285	....	....	....	....	....
HUDSON																		
Super-6	6-3½x5	29.4	Delco	Own	Delco	D	3	125½	35x4½	SS	1650	†1750	1650	1950	2175	2925	....
HUPMOBILE																		
	4-3½x5½	22.5	A.Kent	Zenith	Wsths	D	3	119	34x4	SS	1385	1385	....	....	1735	....	....
NU	4-3½x5½	22.5	A.Kent	Zenith	Wsths	D	3	134	35x4½	SS	....	....	1540	....	....	....	....
INTER-STATE																		
T	4-3½x5	19.6	Remy	Schebler	Remy	C	3	110	33x4	SS	875	925	†950	....	1325	....	....
JACKSON																		
349	3-3 x3½	28.8	A-Lite	Zenith	A-Lite	DP	3	118	34x4	SS	†1495	1495	1495	....	2195	....	1705
JONES	6-3½x5½	29.4	Remy	Stmbg	Remy	DP	3	125	34x4	..	....	1675	1675	....	2550	....	....
JORDAN																		
Sixty	6-3½x5½	29.4	Bosch	Stmbg	Bijur	DD	3	127	35x4½	SS	1995	†1995	1995	....	2650	3300	....
KING																		
E	8-3 x5	38.8	A.Kent	Ball	Bijur	DP	3	130	34x4	SS	‡1585	†1700	1650	....	2300	....	....
KISSEL																		
100-pt.	6-3½x5	25.3	Remy	Stmbg	Own	C	3	117	34x4	SS	†1295	1295	1385	1735	1735	....	1735
Double-6	12-3½x5	39.7	Delco	Stmbg	Own	DD	3	...	34x4½	..	1385	....	2250	....	2650	....	2650
KLINE																		
6-38-G	6-3½x4½	25.3	Wsths	Rafid	Wsths	DP	3	120	34x4	SS	1375	1295	†1895	....	....	....	....
LEXINGTON																		
6-O	6-3½x4½	25.3	Conn	Rafid	Wsths	DD	3	116	33x4	QD	1345	1345	....	1450	1450	....	....
6-R	6-3½x4½	25.4	Conn	Rafid	Wsths	P	3	122	34x4	QD	....	....	1585	....	....	....	....
LIBERTY																		
6	6-3½x4½	25.4	Delco	Stmbg	Delco	DP	3	115	33x4	SS	1350	1350	....	....	1925	....	....
LOCOMOBILE																		
38 Series II	6-4½x5	48.3	Berling	Ball	Wsths	DD	4	139	37x5	QD	†5150	*5000	5000	....	....	6200	....
48 Series II	6-4½x5½	48.6	Berling	Ball	Wsths	DD	4	142	37x5	QD	†6050	*5950	5950	....	....	7200	....
LOZIER																		
84	4-4½x6½	28.9	Bosch	Stewart	G & D	D	4	120	36x4½	SS	....	....	1695	....	....	....	....
82	6-3½x6	36.0	Eismn	Rafid	G & D	D	3	132	36x4½	SS	....	....	2775	....	....	....	....
LUVERNE																		
17	6-3½x5	33.7	Bosch	Schebler	Bosch	DD	.	132	35x4½	SS	....	....	1650	....	....	....	....

PAN-AMERICAN																		
	6-3½x5	23.4	G & D	Rafid	G & D	D	3	120	32x4	SS	....	1500	....	....	....	....	....
PATERSON																		
6-45	6-3½x4½	25.4	Delco	Stmbg	Delco	C	3	117	32x4	C	†1295	1365	1295	....	....	....	....
PATHFINDER																		
3-A, B, C	12-2½x5	39.7	Delco	Stmbg	Delco	DD	3	135	35x5	SS	3250	3250	3250	....	....	....	....
PEERLESS																		
56-2	8-3½x5	38.8	A.Kent	Special	A-Lite	DD	3	125	35x4½	SS	†2340	....	2340	2850	2900	3690	....
PIERCE-ARROW																		
38-C-4	6-4 x5½	38.4	Bosch	Own	Wsths	C	4	134	36x4½	QD	4800	4800	†4800	5000	....	....	....
48-B-4	6-4½x5½	48.6	Bosch	Own	Wsths	C	4	142	37x5	QD	5400	5400	5500	6300	....	....	....
66-A-4	6-5 x7	60	Bosch	Own	Wsths	C	4	147½	38x5½	QD	†6400	6400	6500	7800	....	....	....
PILOT																		
6-45	6-3½x5	23.4	Delco	Titan	Delco	DP	3	119	32x4	SS	†1295	1295	....	....	....	....	....
PREMIER																		
6-B	6-3½x5½	27.3	Delco	Johnson	Delco	DP	3	125½	35x4½	SS	2285	....	2285	....	....	....	....
PRINCESS																		
4-36	4-3½x4½	22.5	Splitdf	Schebler	Disco	D	3	108	32x3½	....	825	825	‡825	....	....	....	....
REGAL																		
J	4-3½x4½	19.6	A.Kent	Carter	A-Lite	C	3	108	30x3½	QD	....	795	....	....	....	....	....
REO																		
M	6-3½x5½	30.4	Remy	Rafid	Remy	DD	3	126	34x4½	SS	....	†1385	1385	....	1960	....	....
R	4-4½x4½	27.2	Remy	Johnson	Remy	DD	3	115	34x4	SS	‡985	985	....	....	....	....	....
ROAMER																		
R.A.	6-3½x5	23.4	Bosch	Stmbg	Bijur	DP	3	127	34x4	SS	2150	1850	....	....	....	....	....
ROSS																		
	8-3½x5	33.8	....	....	W.Lard	DD	3	130	35x4½	SS	‡1850	....	1850	....	....	....	....
SAXON																		
B-5-R	4-2½x4	12.1	A.Kent	Schebler	Wagner	DD	3	96	30x3	DC	895	....	....	....	....	....	....
S-4	6-2½x4½	19.8	Remy	Stmbg	Wagner	DD	3	112	32x3½	SS	925	925	....	1395	....	....	....
SAYERS	6-3½x4½	25.3	Delco	....	Delco	P	3	...	32x4	..	....	1295	....	....	....	....	....
SCRIPPS-BOOTH																		
D	8-2½x3½	22.0	Remy	Zenith	Wagner	DD	3	120	32x4	SS	†1425	....	....	....	....	....	....
G	4-3½x4	21.7	Remy	Zenith	Remy	C	3	110	30x3½	C	1250	....	....	....	....	....	....
SIMPLEX																		
5	6-4½x6½	45.9	Eismn	Nwcmb	Bosch	D	4	143½	37x5r	QD	Chassis	7000	....	....	....	....	....
SINGER																		
17	6-4 x5½	38.4	Bosch	Rafid	Wsths	DD	4	138	35x5	QD	3800	†3800	3800	....	....	4750	....
STANDARD																		
8	8-3½x5	33.8	Splitdf	Zenith	Apico	D	3	127	35x4½	....	†1950	....	2000	....	3500	3500	....
STANLEY																		
Steamer	2-4 x5	....	....	....	....	..	.	130	35x4½	SS	‡2300	2300	2300	....	....	....	....
STEARNS																		
SK14	4-3½x5½	22.5	Remy	Schebler	Wsths	DD	3	119	34x4	SS	†1785	1785	1925	2300	2385	3200	....
SK8	8-3½x5	38.8	Remy	Rafid	Wsths	DD	3	125	35x4½	SS	†2575	....	2575	3200	....	3875	....
STEPHENS																		
Salient Six	6-3½x4½	25.3	Delco	Stmbg	Delco	P	3	117½	32x4	..	‡1385	1385	....	....	....	....	....
STUDEBAKER																		
SF-4-40	4-3½x5	24.2	Remy	Schebler	Wagner	C	3	112	34x4	SS	‡1050	....	1050	....	....	....	....
ED-6-50	6-3½x5	36.4	Remy	Schebler	Wagner	C	3	122	35x4½	SS	‡1385	....	1385	1850	1850	2750	....
STUTZ																		
R	4-4½x6	30.6	Bosch	Stmbg	Remy	C	3	130	32x4½	SS	2550	†2650	*2750	....	....	....	....
S.Bearcat	4-4½x6	30.6	Bosch	Stmbg	Remy	C	3	130	32x4½	SS	2550	....	....	....	....	....	....
SUN																		
17	6-3½x5	23.4	Remy	Rafid	Remy	DP	3	116	34x4	SS	†1345	1345	1345	....	....	....	....
VELIE																		
28	6-3½x4½	25.3	Remy	Stmbg	Remy	DP	3	115	32x4	SS	1265	1265	†1265	....	1835	....	....
27	6-3½x5½	29.4	Remy	Stmbg	Remy	DP	4	124	35x4½	SS	....	....	1595	....	....	....	....
WESTCOTT																		
S-17	6-3½x5½	29.4	Delco	Rafid	Delco	DD	3	125	35x4½	SS	†1790	1790	1790	....	2390	....	....
WHITE																		
16-Valve	4-4½x5½	38.9	Bosch	Own	L.N.	P	4	{124½ 137½	33x4½ 37x5	QD	†4600	....	4600	5650	5650	5800	....
WILLYS-KNIGHT																		
88-4	4-4½x4½	27.2	Conn	Titan	A-Lite	C	3	121	34x4½	SS	....	....	1450	....	....	....	....
88-8	8-3½x4	36.4	Remy	Zenith	A-Lite	C	3	125	34x4½	SS	....	....	1950	....	2650	3750	....
WILLYS																		
80-6	6-3½x5½	29.4	Conn	Titan	A-Lite	C	3	120	33x4½	SS	†1295	....	1295	....	1975	....	....
WINTON																		
33	6-3½x5½	33.7	Bosch	Rafid	Bijur	DD	4	128	36x4½	QD	2950	2950	3000	3865	4165	4165	....
48	6-4½x5½	48.6	Bosch	Rafid	Bijur	DD	4	138	37x5	QD	3500	3500	3500	4500	4750	4750	....

*5-passenger. †4-passenger. ‡3-passenger.

ABBREVIATIONS—"A-C" Allis-Chalmers, "L-N" Leece-Neville, "Titan" Tillottson, "Atzr" Atomizer, "Rech" Reichenbach, "DD" Dry Disk, "DP" Dry Plate, "G" Gearless, "F" Friction, "QDR" Quick Detachable Reversible, "R & M" Robbins & Myers. NOTE—37½x5½r means that the rear tires are 37x5½, and the front are smaller. Detachable top, 360r, means $360 extra.

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Los Angeles Show Postponed

LOS ANGELES, Oct. 14—Another postponement has been made in the date of the annual automobile show to be held under the auspices of the Motor Car Dealers' Association. Nov. 12 to 16 has been designated this time. The delay was occasioned by the fact that the Sunday tabernacle, which will be used in part, will not be available in time to make the necessary alterations by Nov. 5, the date previously decided upon. This year's show will have 106,000 sq. ft. of floor space, and it will be the largest ever held in this country from this standpoint. Last year there was less than 60,000 sq. ft. and it was insufficient. Of this vast area already approximately 75,000 sq. ft. has been reserved by dealers in cars and trucks.

Meridian Not Bought by Olympian

INDIANAPOLIS, Oct. 12—The recent report in Motor World that the Olympian Motor Co., Pontiac, had bought out the Meridian Mfg. Co., Indianapolis, was an error, as the Meridian plant is still operating and manufacturing bodies. It is now producing 19,000 bodies and is taking on new contracts. All the Olympian company purchased at this plant was stock to build 400 bodies.

Motor Car Securities Quotations

	Oct. 11, 1917 Bid	Asked
*Ajax Rubber Co	55	57
*J. I. Case T. M. Co., pfd	..	82
Chalmers Motor Co., com	2	5
Chalmers Motor Co., pfd	..	..
*Chandler Motor Co	73	74½
Chevrolet Motor Co	76	79
*Fisher Body Corp., com	25	35
*Fisher Body Corp., pfd	83	87½
Fisk Rubber Co., com	60	65
Fisk Rubber Co., 1st pfd	102	105
Fisk Rubber Co., 2nd pfd	90	95
Firestone Tire & Rubber Co., com.	107	110
Firestone Tire & Rubber Co., pfd.	100	102
*General Motors Co., com	96½	96⅝
*General Motors Co., pfd	77¼	78
*B. F. Goodrich Co., com	41½	42¼
*B. F. Goodrich Co., pfd	100	103
Goodyear Tire & Rubber Co., com.	170	175
Goodyear Tire & Rubber Co. pfd.	100	102
Grant Motor Car Corp	2	4
Hupp Motor Car Corp., com	2½	3½
Hupp Motor Car Corp., pfd	82	88
International Motor Co., com	8	12
International Motor Co., 1st pfd	..	50
International Motor Co., 2nd pfd	15	30
*Kelly-Springfield Tire Co., com.	41¾	42
*Kelly-Springfield Tire Co. 1st pfd	85	90⅛
*Lee Rubber & Tire Corp	16½	17
*Maxwell Motor Co., Inc., com	33	33½
*Maxwell Motor Co., Inc., 1st pfd	65	67
*Maxwell Motor Co., Inc., 2nd pfd	19¼	19¾
Miller Rubber Co., com	165	175
Miller Rubber Co., pfd	100	102
Packard Motor Car Co., com	143	148
Packard Motor Car Co, pfd	94	98
Paige-Detroit Motor Car Co	23	25
Peerless Truck & Motor Corp	11	13
Portage Rubber Co., com	120	125
Regal Motor Car Co., pfd	15	20
†Reo Motor Car Co	24	25¼
*Saxon Motor Car Corp	12	14
Springfield Body Corp., com	..	..
Springfield Body Corp., pfd	..	..
Standard Motor Construction Co.	8½	9½
Standard Parts Co	..	78
*Stewart-Warner Speed. Corp	53	54
*Studebaker Corp., com	42¼	43
*Studebaker Corp., pfd	..	90
Swinehart Tire & Rubber Co	40	50
United Motors Corp	21	21¼
*U. S. Rubber Co., com	57⅞	58¼
*U. S. Rubber Co , pfd	101⅞	103
*White Motor Co	39⅞	40
*Willys-Overland Co., com	24½	25
*Willys-Overland Co., pfd	85⅛	90

*At close Oct. 11, 1917. Listed N. Y. Stock Exchange. †Par value $10.

Coming—THE SHOW CALENDAR—*Events*

Shows

Pittsburgh, Pa	Automobile Dealers' Assn. of Pittsburgh. Motor Square Garden. John J. Bell, Mgr.	Oct. 13-20
Dallas, Tex	State Fair of Texas. S. I. Munger, Director in Charge.	Oct. 13-28
Dallas, Tex	Dallas Automobile & Accessory Dealers' Assn., State Fair. S. I. Munger, Mgr.	Oct. 13-28
Atlanta, Ga	Southeastern Fair, Atlanta Automobile Trade Assn.	Oct. 14-20
Columbus, O	Columbus Auto Show Co., State Fair Grounds; J. P. Gordon, Chairman of Committee.	Oct. 18-27
Syracuse, N. Y	First Annual Closed Car Show, State Armory, Syracuse Automobile Dealers' Assn.	Oct. 22-26
Worcester, Mass	Casino and Bancroft Hotel, United Shows Co. E. H. Winchell, Publicity Manager.	Oct. 22-29
Los Angeles, Cal	Motor Car Dealers Assn., Billy Sunday Tabernacle. J. S. Conwell, Mgr.	Nov. 12-17
Denver, Col	Automobile Trades Assn., Show Committee, Auditorium. G. A. Wahlgreen, Mgr.	Nov. 12-18
Akron, O	Akron Auto Show Assn., Auditorium Armory. C. G. Armstrong, Mgr.	Dec. 3-8
Ft. Dodge, Ia	Ft. Dodge Auto Dealers' Assn. G. W. Tremain, Mgr.	January
New York, N. Y	Eighteenth Annual, Automobile Chamber of Commerce, Grand Central Palace.	Jan. 5-12
Washington, D. C	Carnival and Open House Week, Automobile Trade Assn. of Washington.	Jan. 11-18
Providence, R. I	R. I. Licensed Auto. Dealers' Assn., State Armory. Percival S. Clark, Mgr.	Jan. 11-19
New York, N. Y	Motor Boat Show, Grand Central Palace, National Assn. of Engine & Boat Manufacturers.	Jan. 19-26
Montreal, Can	National Motor Show of Eastern Canada, Montreal Automobile Trade Assn.	Jan. 19-26
Scranton, Pa	Scranton Motor Trades Assn., Armory. Hugh B. Andrews, Mgr.	Jan. 21-26
York, Pa	York Auto Dealers' Assn., Queen St. Tabernacle. T. F. Pfeiffer, Sec.	Jan. 21-26
Allentown, Pa	Lehigh Auto. Trade Assn., Traylor Motor Co.'s Garage. P. W. Leisering, Publicity Mgr.	Jan. 23-28
Chicago, Ill	Eighteenth Annual, Coliseum and Armory, National Automobile Chamber of Commerce.	Jan. 26-Feb. 2
Philadelphia, Pa	Seventeenth Annual, Philadelphia Auto. Trade Assn., Commercial Museum Bldg.	Jan. 11-19
Milwaukee, Wis	Milwaukee Automobile Trades, Inc., Auditorium; Bart J. Ruddle, Mgr.	Jan. 18-24
Portland, Ore	Motor Car Dealers' Assn., Armory. Jos. M. Rieg, Mgr.	Jan. 21-26
Mifflintown, Pa	Automobile Trade Assn., Valley Stream Auditorium.	Jan. 22-26
Manchester, N. H	Academy. Couture Bros.	Jan. 28-Feb. 2
Peoria, Ill	Peoria Auto and Accessories Dealers Assn. W. O. Ireland, Mgr.	February
Minneapolis, Minn	Minneapolis Auto. Trade Assn., Walter B. Wilmot, Mgr.	Feb. 2-9
Kansas City, Mo	Kansas City Motor Car Dealers' Assn., E. E. Peake, Mgr.	Feb. 9-16
St. Louis, Mo	St. Louis Auto Mnfrs. & Dealers' Assn. Robert E. Lee, Mgr.	Feb. 11-16
Newark, N. J	N. J. Auto Exhibition Co., First Regiment Armory. Claude E. Holgate, Mgr.	Feb. 16-23
Syracuse, N. Y	Syracuse Automobile Dealers' Assn., State Armory. Harry T. Gardner, Mgr.	Feb. 18-23
Grand Rapids, Mich	Automobile Business Assn., Klingman Building. Ernest T. Conlon, Mgr.	Feb. 18-23
Springfield, O	Springfield Auto Trades Assn., Memorial Hall. C. S. Burke, Mgr.	Feb. 18-23
Pittsfield, Mass	State Guard, State Armory. James J. Callagan, Mgr.	Feb. 18-23
So. Bethlehem, Pa	Fourth Annual (cars 18-23; trucks 25-27), Coliseum. J. L. Elliot, Mgr.	Feb. 18-27
Cedar Rapids, Ia	Cedar Rapids Auto. Trade Assn., Auditorium.	March
Kalamazoo, Mich	Kalamazoo Automobile Dealers' Assn., Armory.	March
Omaha, Neb	Omaha Auto. Trade Assn., Auditorium, Clarke G. Powell, Mgr.	Feb. 23-Mar. 2
Boston	Boston Automobile Dealers Association. Mechanics Building, Chester I. Campbell, manager.	Mar. 2-9
San Francisco, Cal	Motor Truck Dealers of San Francisco, Auditorium. Ivan R. Gates.	Mar. 19-24
Trenton, N. J	Trenton Auto Trade Assn., Second Regiment Armory. John L. Brock, Mgr.	Mar. 20-23
Stockton, Cal	San Joaquin Auto Trade Assn. Samuel S. Cohn, Mgr.	Apr. 9-13
Springfield, Mass	Auditorium Building, United Shows Co.	Dec. 3-9 1918

General and Racing

Columbus, O	Dixie Highway Tour	Oct. 24
New York, N. Y	Races, Sheepshead Bay Speedway	Oct. 27 1918
New York	Convention, National Assn. of Auto Accessory Jobbers, Hotel Astor. Astor.	Jan. 11-16

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National

Airplane Type Motor

This new National, twelve-cylinder, Touring Sedan knows no closed season.

To the dealer it brings an eager market through the twelve months of the year.

To its owner it means motor comfort and pleasure the whole year around.

It is at once a wide open touring car for pleasant weather, or a securely sheltering carriage for winter months.

At a moment's notice it is swiftly and easily convertible—open to closed, or closed to open—the glass panels disappearing into the body of the car.

It is so substantially built as to be entirely free from annoying rattle.

With always a reserve to command, the more than amply powerful and silent twelve-cylinder motor readily assumes the slightly greater weight of the Sedan body.

A rangy master of country roads and of heavy city traffic—this National Touring Sedan is truly a performing closed car, capably meeting conditions, and accepting tasks and accomplishing them with the ease of an open model.

And its performance is one of economy. Consistently smooth and perfectly balanced, it is remarkably sparing of tires and fuel.

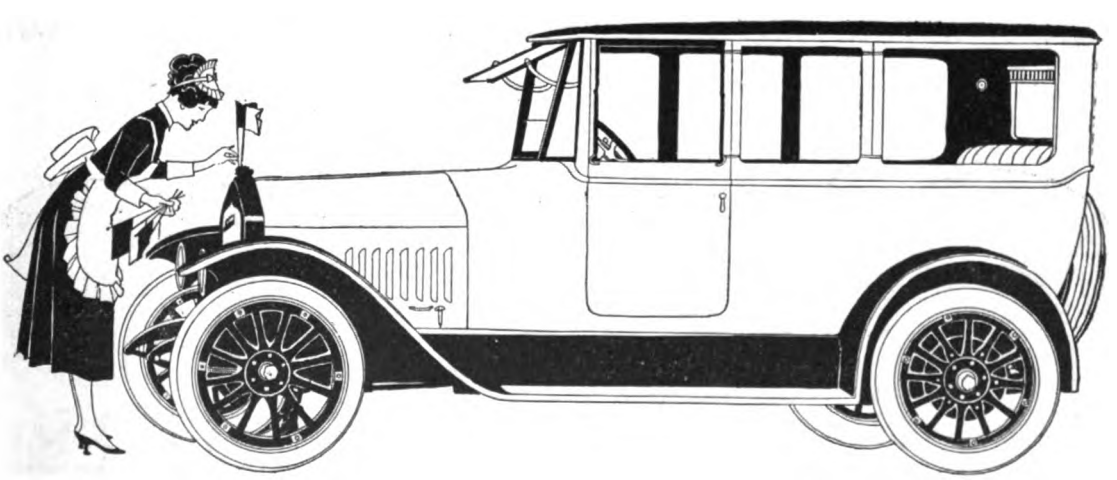
In your showroom, subject to the most critical inspection of your most particular prospect, its luxury and elegance will command his open admiration.

In demonstration, its activity in smooth or rough going and its ability in the most trying tests will compel his respect.

Complete Range of Body Styles in Both

Six & Twelve Cylinder Models

7-Passenger Touring Car, 4-Passenger Sport Phaeton, 4-Passenger Roadster, Convertible Sedan
The Six Sedan $2820, The Twelve Sedan $3420
Open Car Prices—The Six $1995, The Twelve $2595



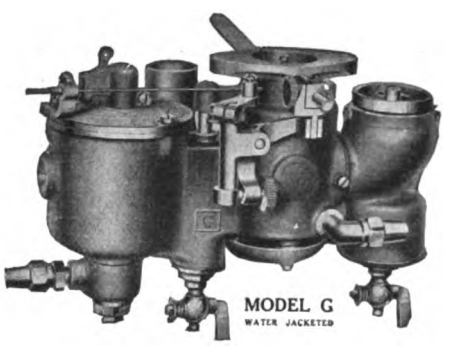
NATIONAL MOTOR CAR & VEHICLE CORPORATION - INDIANAPOLIS

Seventeenth Successful Year

When writing advertisers please mention Motor World—It identifies you

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Sell Trouble-free Winter Carburetion



Your customers think most of you when you show them how to keep out of trouble on the road. Isn't that right?

And improper carburetion is one of the greatest bugaboos the car owner faces today—particularly in winter, when it takes a really good carburetor to meet the problems of temperature changes.

In selling your man a Rayfield, you know just what you can guarantee to him. And you know that the Rayfield will live up to everything stated in our strong guarantee.

You take no chances. It makes good in all you promise for it; and it makes satisfied customers and friends for you.

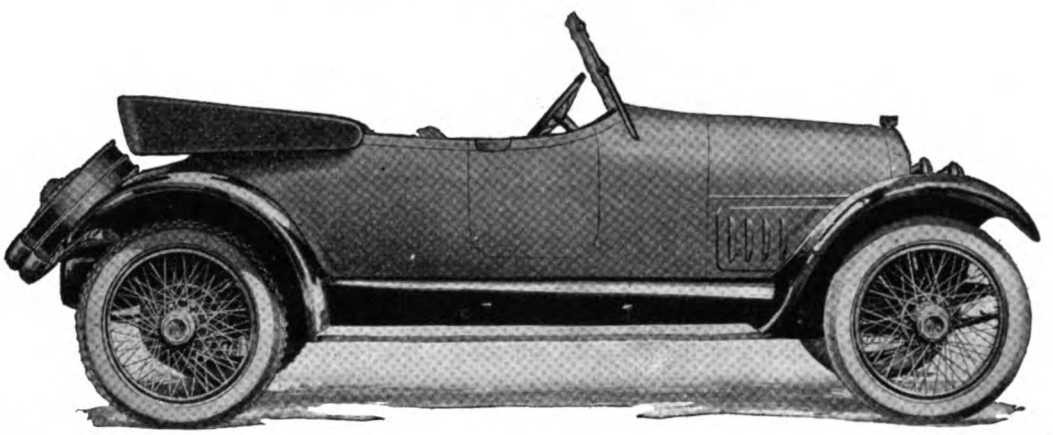
If you haven't gone into this Rayfield proposition you have been overlooking a great profit field and a greater friend-winning opportunity. Let us tell you more about what the Rayfield means to you.

Findeisen & Kropf Mfg. Co.
2101 Rockwell Street, Chicago

RAYFIELD CARBURETOR

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The Willys-Knight Eight



Two more great cars adopt the WALTHAM AUTOMOBILE CLOCK

We ask no advertisement better than this—that the Waltham has been added to the equipment of *two more* great cars, the Willys-Knight and the Willys.

What proof need we add to such evidence of Waltham supremacy? Only this—the names of the twenty Monarchs of Motordom which carry the Waltham as standard equipment.

Brewster
Cadillac
*Chalmers
†Cole
Crane-Simplex
Detroit-Electric
Franklin
Haynes-12
**Hudson
Locomobile
Marmon
Mercer
Owen Magnetic
Packard
††Pierce-Arrow
Rauch & Lang
Stearns
Willys Six Sedan
***Willys-Knight Eight
Winton

*Limousine, Landaulet
†Sedan, Coupe
**Limousine, Landaulet, Town Car, Landaulet-Limousine
††Enclosed Bodies
***Varsity, Sedan, Limousine, Town Car



WALTHAM WATCH CO., WALTHAM, MASS.

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CREW LEVICK "As Old as the Industry" CREW LEVICK

CREW LEVICK Grease-in-Tubes CREW LEVICK

Is the Accessory Merchant Entitled to a Living Wage?

OUT of more than 17,000 business failures reported last year, about 1,500 were accessory dealers and garages.

Here is a death rate of *five dealers every day* in a line of retail business that ought to be one of the best paying in this country—with a service to perform to the most prosperous class of customers in America.

It is a fact that the accessories dealer who is *making a merchant's profit,* is doing business on a clean, compact, well-chosen stock of accessories that sell because they perform a real service to motorists.

It is a fact that every dealer who *fails* to make the money he is entitled to, is sinking his profits in the carrying of dead stock, or the cut-price competition to keep his stocks moving.

It is a fact that the motorist is becoming better informed every day, knows more about his car—has a keener sense of *values* and less inclination to fall for everything that looks like it might be an accessory.

The Crew Levick Company, through its long and intimate connection with every branch of the automobile trade, comes into the accessories field with a full knowledge of these facts. And, better still, a *definite idea of what ought to be done about them.*

Crew Levick Accessories will always be fundamental—articles of the widest possible sale because they answer some definite need of the motoring public, in a newer and better way.

The number of Crew Levick automobile accessories is still small. It will be extended only as new articles of the Crew Levick Standard can be developed.

Crew Levick products are all articles that can be advertised at large to the consumer—and can be depended upon to *stay sold.* There is nothing for anybody in a motor accessory that does not create good will.

With its fifty-five years' experience this Company has been supplying fine motor oils and greases ever since the beginning of the automobile industry.

In the face of a score of brands the CrewLevick Oils and Greases have a wider following today than ever.

Now we purpose to make our accessories business just as profitable for the dealer.

The Crew Levick Family of Motor Products

Motor Oils and Greases

that prolong the life of the car. A grade for every purpose—and each grade perfect in lubricating qualities. Oils in 1 and 5 gal. cans. Greases in 5, 10, 25 lb. cans.

Grease-in-Tubes

"The tube way is the best way"

You buy safety, cleanliness, economy in every kit. Pure grease for the right purpose. $1.50 for 3 generous tubes.

Tire Seal

"Lets tires make good"

Eliminates forever the possibility of punctures. Inner tubes will last longer with Tire Seal, a thoroughly practical product. $1.50 -2.00—2.50 per can.

Fractors

"All the light, but within the law"

Glass cups that fit under the lamp bulb and scientifically solve the headlight problem. Shoot a brilliant light far ahead. Do not blind. One size for all lamps. $2.75 a pair.

Mistokleen

"The smartest cars are Mistokleened"

Its use keeps you proud of your car. Works easily, quickly, thoroughly. Filled sprayer $1.25.

Mistokloths

"A clean Kloth always handy"

A new idea for your convenience. As handy around the car as a handkerchief in your pocket. In neat boxes, 25c and 50c.

CREW LEVICK CREW LEVICK

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CREW LEVICK Mistokloths CREW LEVICK

CREW LEVICK Motor oils and greases CREW LEVICK



THESE chilly days and frosty nights are just a reminder of what is to come! But you can take the sting out of the coldest days with a Victor Fresh-Air Heater in your Ford.

The Victor is the *new scientific heater* that makes winter riding in your Ford Touring Car more comfortable than in any closed car.

The Victor *Fresh-Air* Heater works on the same principle as the hot air furnace in the house. It has a metal drum, which is heated by the hot gas from the engine exhaust. Fresh cold air circulates around the drum, and as it heats up it rises through a register in the floor of the car.

You turn on a lever and instantly get a supply of fresh warm air — just as you turn on the heat at home.

The Victor *Fresh-Air* Heater is directly connected to the motor. The exhaust is not forced through flexible tubing or pipes; is not raised or deflected in any way. The exhaust finds an easier outlet through the heater than through the muffler. And a slotted metal plate at the right of the drum creates a suction action which draws the exhaust, thus eliminating all possibility of back-pressure on the motor.

All the heating of the air is done *underneath the car.* You're not carrying a hot stove inside the tonneau to scorch shoes and clothes.

The Victor has no complicated parts, nothing can ever get out of order. It costs nothing to operate.

Ask your dealer to show you a Victor *Fresh-Air* Heater.

You can't buy as much winter comfort in any other heater at any price as you get in a Victor *at five dollars.* Install one today. You can do it yourself in about 20 minutes. We even furnish new floor boards to make sawing and patching unnecessary.

TO DEALERS!

If you haven't stocked Victor Heaters yet you're missing profits on a product that is selling big—NOW. There will be more Ford cars in use this winter than ever before. These Ford owners will want complete comfort from the cold. Be prepared to show them the Victor—the only heater that is scientifically constructed to heat *fresh air direct*—not metal. And the price of $5 appeals to all Ford owners.

Ask your jobber — or write direct — today.

CREW LEVICK

VICTOR REG. U.S. PAT. OFF. fresh air HEATER

for FORD Cars $5

CREW LEVICK CO. **PHILADELPHIA, PA., U. S. A.**

Oldest and one of the Largest Producers and Refiners of Oils, and Manufacturers of Petroleum Products

Refiners:
Pennsylvania Paraffine Works, Glade Oil Works, Pembrick Oil Co., Pa., Bessemer Refining Co., Seaboard Oil Works, Lawrence Oil Co., Pa.

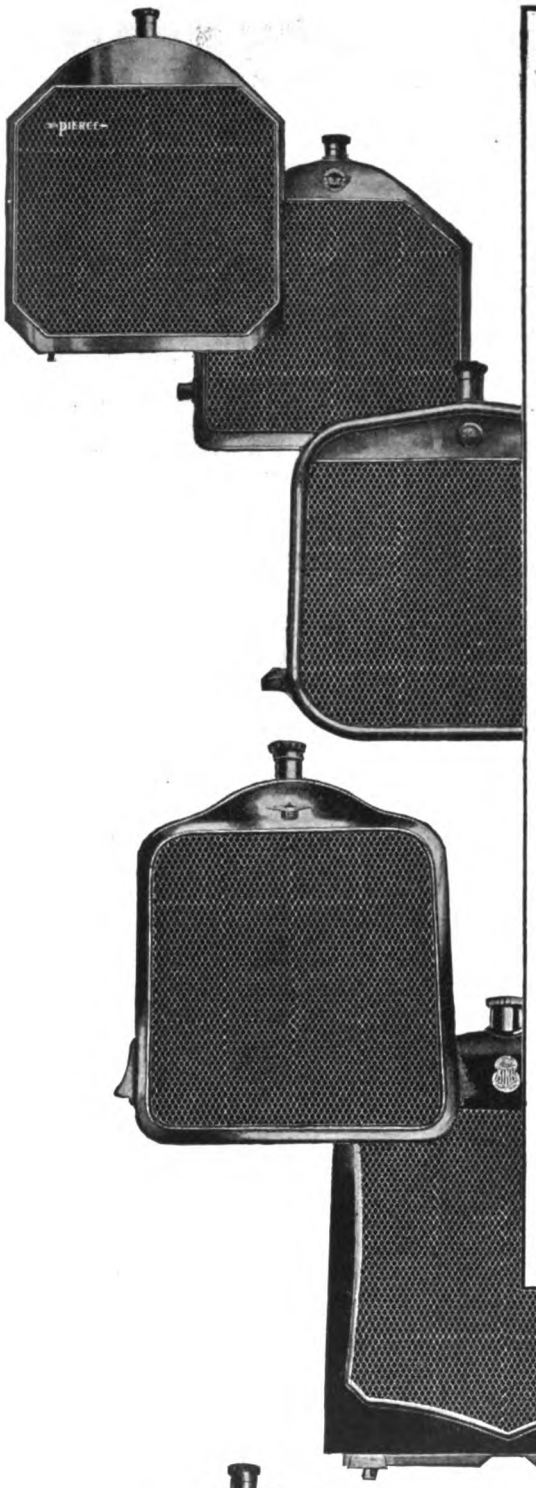
Producing Companies:
Muir Oil Co., Pa., Warren Co., Illinois, Combination Oil Co., Pa., Oklahoma

Branches: New York, Chicago, San Francisco, Baltimore, Boston

Foreign Offices: London, England

CREW LEVICK Heaters CREW LEVICK

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TYPES

From cars costing a few hundreds, to cars costing thousands of dollars, you will find those with the greatest reputations for dependable, cool-running motors, are equipped with FEDDERS RADIATORS.

For the "blue-blood" of the automobile aristocracy, Fedders Radiators have been chosen as a matter of course. The finest motors—the most expensive finish—the most luxurious equipment—all demand radiators that are perfectly in keeping.

In still greater degree the assurance of perfect radiator service is demanded for those cars sold on the basis of utility rather than luxury. Here the standard of service is an absolute necessity and "Fedders" quality an added selling point.

Fedders Radiators are today used on more high grade automobiles than any other radiator. On many, Fedders Radiators have been standard equipment since their inception, more than thirteen years ago.

Our engineering department is always at your command in the solution of your radiation problems. Your inquiries will receive prompt attention.

FEDDERS MFG. CO., INC. BUFFALO NEW YORK

FEDDERS RADIATORS



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STEPHENS *Salient Six*

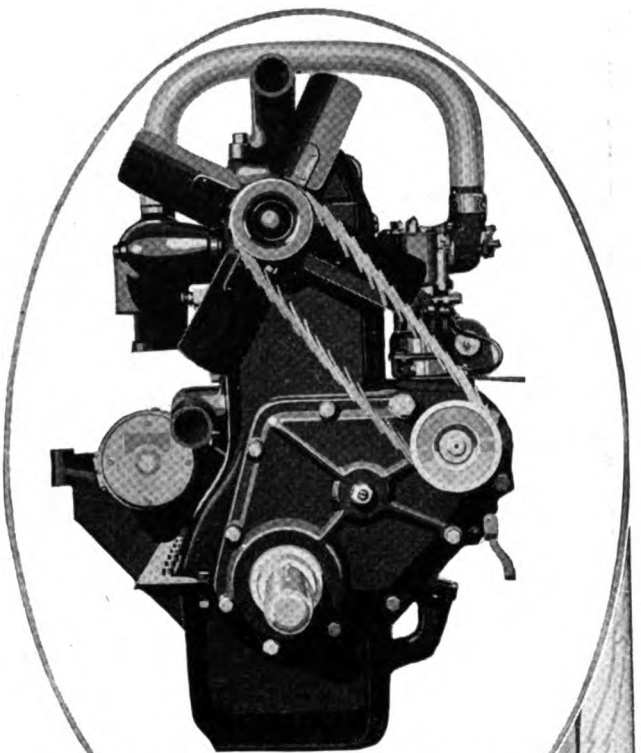
WITH *PERFECTED OVERHEAD-VALVE ENGINE* THAT SOLVES THE LOW-GRADE FUEL PROBLEM

We have reached the goal ahead of the entire automobile field, with our perfected overhead-valve engine that runs effectively and without waste on today's poor quality gasoline. We have attained an engineering ideal in the 1918 Stephens Salient Six.

Other far-sighted manufacturers are now rapidly striving to introduce fuel-conservation principles into their engines. This fact is proof sufficient that today's automobile is the car whose engine has a speed range and power above the average, yet which consumes fuel with a miserly economy.

Our justifiable confidence in the Stephens Salient Six engine is based on its common-sense principles of manifold construction. The intake from the carburetor is short—10½ inches to the farthest valve. Its interior is machined smooth, preventing the least fuel condensation. The manifold is superheated its entire length because it is incorporated in the cylinder-casting.

Gas mixture from the carburetor is shot against an intensely hot metal plate, broken down and coursed through this flawless manifold to unusually large cylinder-valves. Every bit of it, whatever its quality, goes directly into the cylinders to develop consistently 57 h.p. and a speed range from 2 to 60 m.p.h. on high.



Front-end view of Stephens Salient Six perfected overhead-valve engine. There are only three visible moving parts—the fan, belt and pulley

Stephens Salient Six performance has been consistently remarkable wherever tests have been conducted. It is only logical that such an engine should be incorporated in a body of distinctive, conservative design, faultless construction and lasting qualities for wear and comfort.

DEALERS: This year offers you an opportunity to progress with the Stephens Salient Six. Never before have equal values been incorporated in an automobile selling at the popular price of $1385. Two models: 5-passenger touring car and 3-passenger roadster. Price f.o.b. Freeport.

On and after October 25 Price will be $1485.

Stephens Motor Branch
of Moline Plow Co., *Moline, Illinois*

Factory: Freeport, Illinois



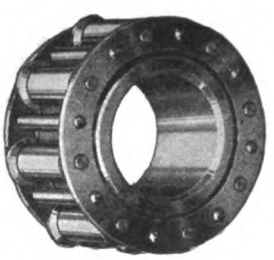
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BOWER SAVES POWER

The 4 Advantages

The Bower Roller Bearing is the only bearing that possesses all of the following advantages:

1. It needs no adjustment.
2. End thrust and radial load are borne by separate surfaces.
3. The rollers are self-aligning, always running free.
4. The raceways and rollers are always parallel, affording maximum line contact and maximum size of rollers.



BOWER
ROLLER BEARING CO.
Detroit Michigan

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Winter Sales Stimulants

Equip your winter production with Perfection Heaters, Mr. Manufacturer, and your dealers will *want* cars *now* because they can sell them now.

Or you, Mr. Dealer, if your manufacturer overlooks this important equipment—supply the deficiency yourself—we'll sell *you* Perfection Heaters—they're easy to install.

Sold cars are better than stored cars any day in the year.

Write for prices and catalogue illustrating all types.

The Standard Parts Co.
Cleveland, Ohio, U. S. A.

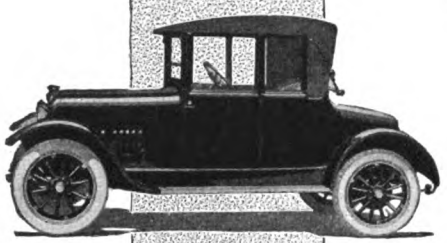
PERFECTION
MOTOR CAR
HEATERS
PATENTED

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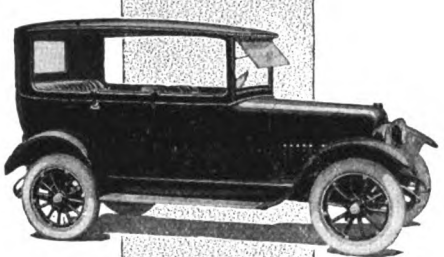
ANNOUNCING NINE Velie



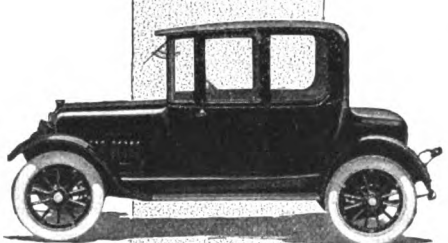
Town Car
$2400



3-Pass. Cabriolet
$1750



Touring Sedan
$1835



4-Pass. Coupe
$1850

Nine Masterpieces of Velie Coach Building

COMBINING the highest achievement in beauty of design with the wonderful mechanism of the famous Velie Six Chassis. Striking body effects have been created for each type of car, a Sport Model of stunning pattern added to the series, making a line fully satisfying and complete.

Bigger—Better—More Power, was the watchword of Velie production just ended. The use of Continental Red Seal Motors, Timken Axles and Bearings, Multiple Disc Clutch and innumerable features of equal merit, brought the Velie Biltwel Six chassis to a state of mechanical perfection. Now, to all this retained and even bettered, have been added qualities totally unexpected in cars of such a price.

Two Chassis of Quality

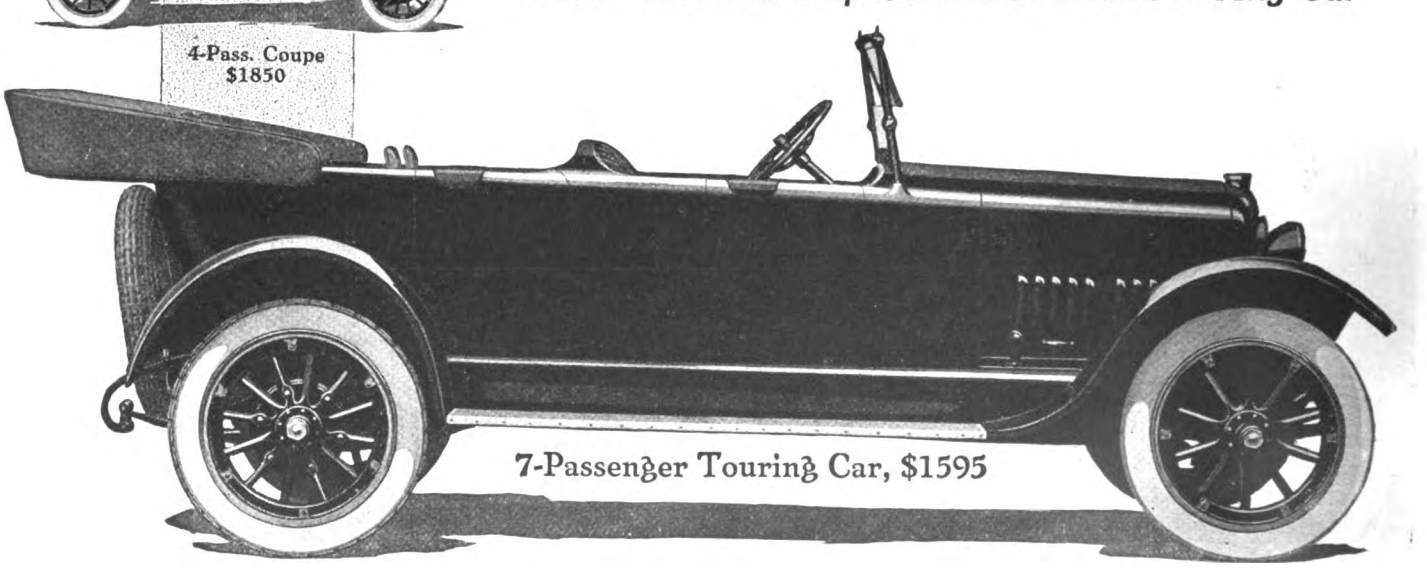
Two chassis make up the new line. The Model 38 chassis has a wheelbase of 115 inches, with six-cylinder motor 3¼ x 4½-inch dimensions. The Model 39 chassis has a wheelbase of 124 inches with motor 3½ x 5¼-inch. Many refinements have been built into both chassis.

You will instantly appreciate the new body lines. A higher radiator produces a hood line almost horizontal back to the sloping shield, while the roll of the body panels continues unbroken from the nose of the radiator to the rise of the rear seat.

Both front and rear seat backs are higher and deeply cushioned over soft springs. The seats themselves tilt back comfortably and are upholstered in French plaits of real leather. Side curtains open with the doors. The top is of waterproof "Drednaut" material.

Velie body work is notably superior. Velie mirror finish is obtained by many coats of paint and varnish vigorously rubbed out by hand.

Better Workmanship Cannot be Found in Any Car



7-Passenger Touring Car, $1595

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NEW BODY STYLES

Biltwel 6

A Business Proposition for the Dealer

AS a business proposition for the prospective car buyer, there is no more thoroughly sound investment in all motordom than the purchase of a Velie—entirely aside from the pleasure it brings.

As a business proposition for the dealer, the Velie reputation, the tremendous resources of the Velie organization, the great production *and* delivery capacity of the Velie factory, the big advertising sales-promotion helps, are powerful and important factors that every motor car dealer recognizes.

A Strong Selling Combination

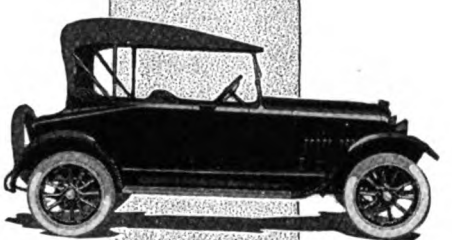
Here is the line that will make money and friends for the strong dealer who is building up a permanent business reputation.

You want beauty—here it is. You want a trouble-proof car—the Velie fully qualifies as such.

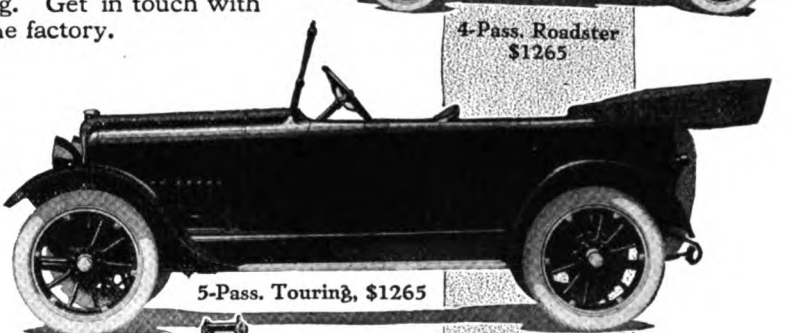
You want to associate yourself with a company of known reputation and integrity—there is no more worthy name in the trade than Velie. Deliveries *now*. Our proposition is interesting. Get in touch with us today by letter or wire. Better still, visit the factory.



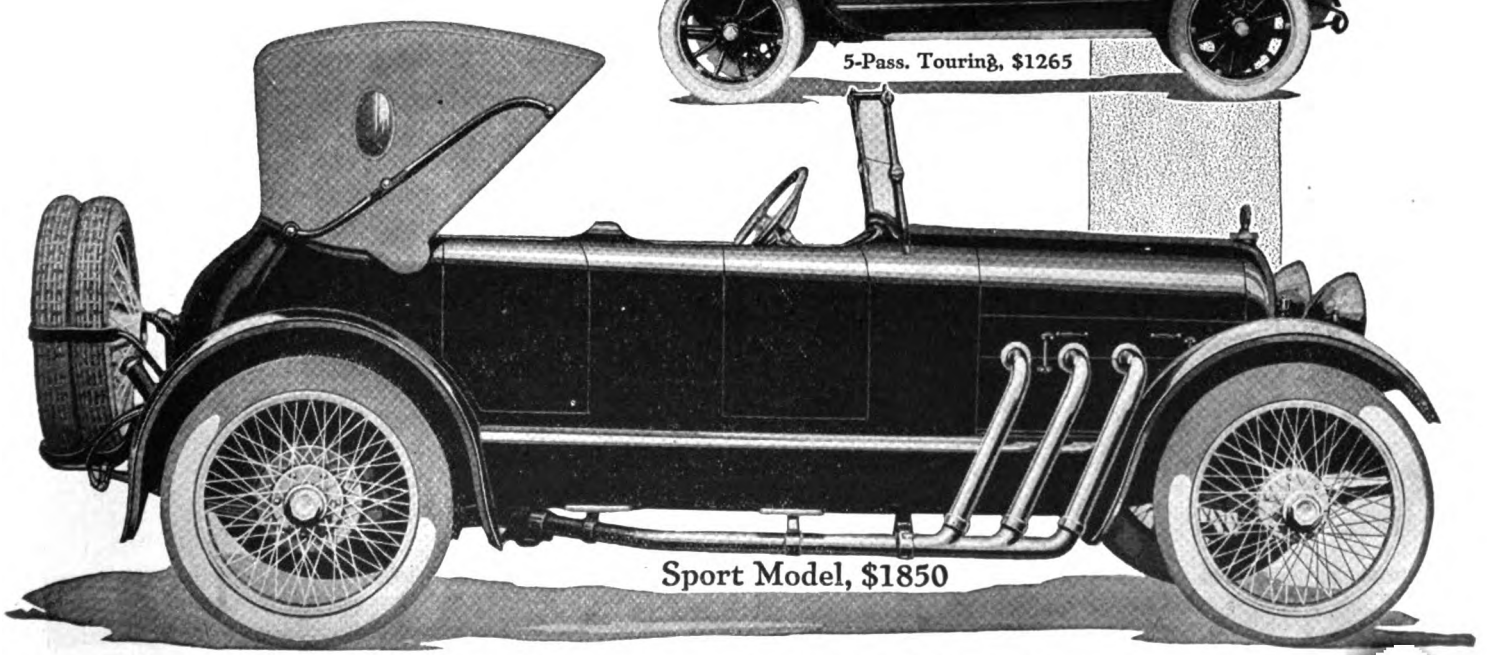
2-Pass. Roadster $1265



4-Pass. Roadster $1265



5-Pass. Touring, $1265



Sport Model, $1850

VELIE MOTORS CORPORATION

115 Velie Place Moline, Illinois

Builders of Automobiles, Motor Trucks and Tractors

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Westinghouse

Quality and integrity are inbuilt in machinery which bears the name Westinghouse.

Because the original design was scientifically correct and the workmanship and materials were sound; because it was not put on the market until the entire mechanism was past every stage of experiment, the Westinghouse Starting and Lighting System for Fords is still exactly the same as it was three years ago.

This is the machine you can depend upon to sell your customers with the assurance that they will be satisfied.

Special liberal discounts to progressive dealers—your self to be sure. Write today for full information.

$85.00 Complete

Backed up by MP Service with personal attention to both the dealer and his customer assured.

W

WESTINGHOUSE ELECTRIC

Sole Distributors for the Westinghouse Starting and Lighting System for Ford Cars.

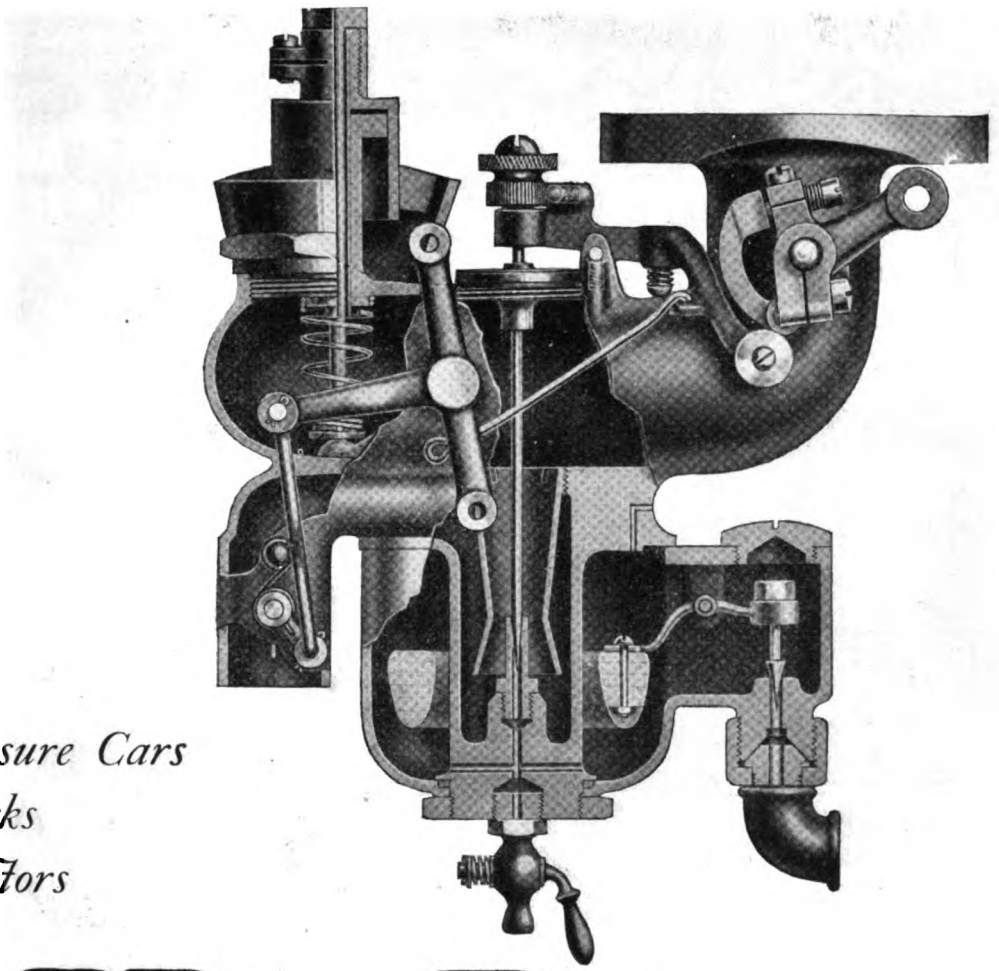
MP TRADE SERVICE

MOTOR PARTS COMPANY

816 North Broad St., Philadelphia

Boston *Springfield* *Buffalo*

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for
Pleasure Cars
Trucks
Tractors

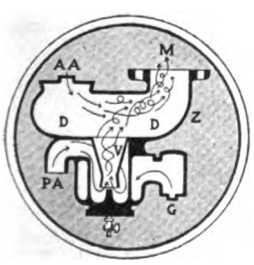
VAN BRIGGLE CARBURETOR

Just One Principle for all Motors

THE VAN BRIGGLE Carburetor does wonderful team work with any gasoline motor. Pleasure car—truck—tractor—they all respond with new life, new power and new determination when the Van Briggle Carburetor takes hold.

And an actual *test* of a Van Briggle Carburetor will prove conclusively the DEGREE to which the Van Briggle excells. Illustrated, descriptive folder free on request. *Send for it.* ¶ JOBBERS AND DEALERS: The Van-Briggle is the FIRST *marketable* carburetor. As easily handled as tires. Small stock meets any need. New opportunity for profit and service.

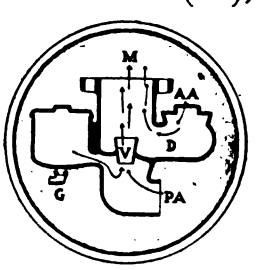
KEY TO DIAGRAMS: PRIMARY AIR (P.A.); AUXILIARY AIR (A.A.); GASOLINE (G.); MANIFOLD (M.); MIXING CHAMBER (D.); VENTURI TUBE (V.); LOCATION OF MANIFOLD ON HORIZONTAL TYPE (Z.).



The Van Briggle Way

EXPLANATION OF DIAGRAMS

Because of the peculiar construction of the Van Briggle's primary air chambers, the primary air enters the venturi tube in a whirling, swirling movement, breaking even the poorest gasoline into the most minute particles. The primary mixture then enters the mixing chamber. The auxiliary air, traveling across to the manifold MUST PASS THROUGH THE PRIMARY MIXTURE. Two mixtures are thus assured in the Van Briggle Carburetor—each thorough and absolute. A thorough mixture and complete vaporization mean EVERYTHING to your motor. Compare the Van Briggle Way with The Other Way. There *is* a difference!

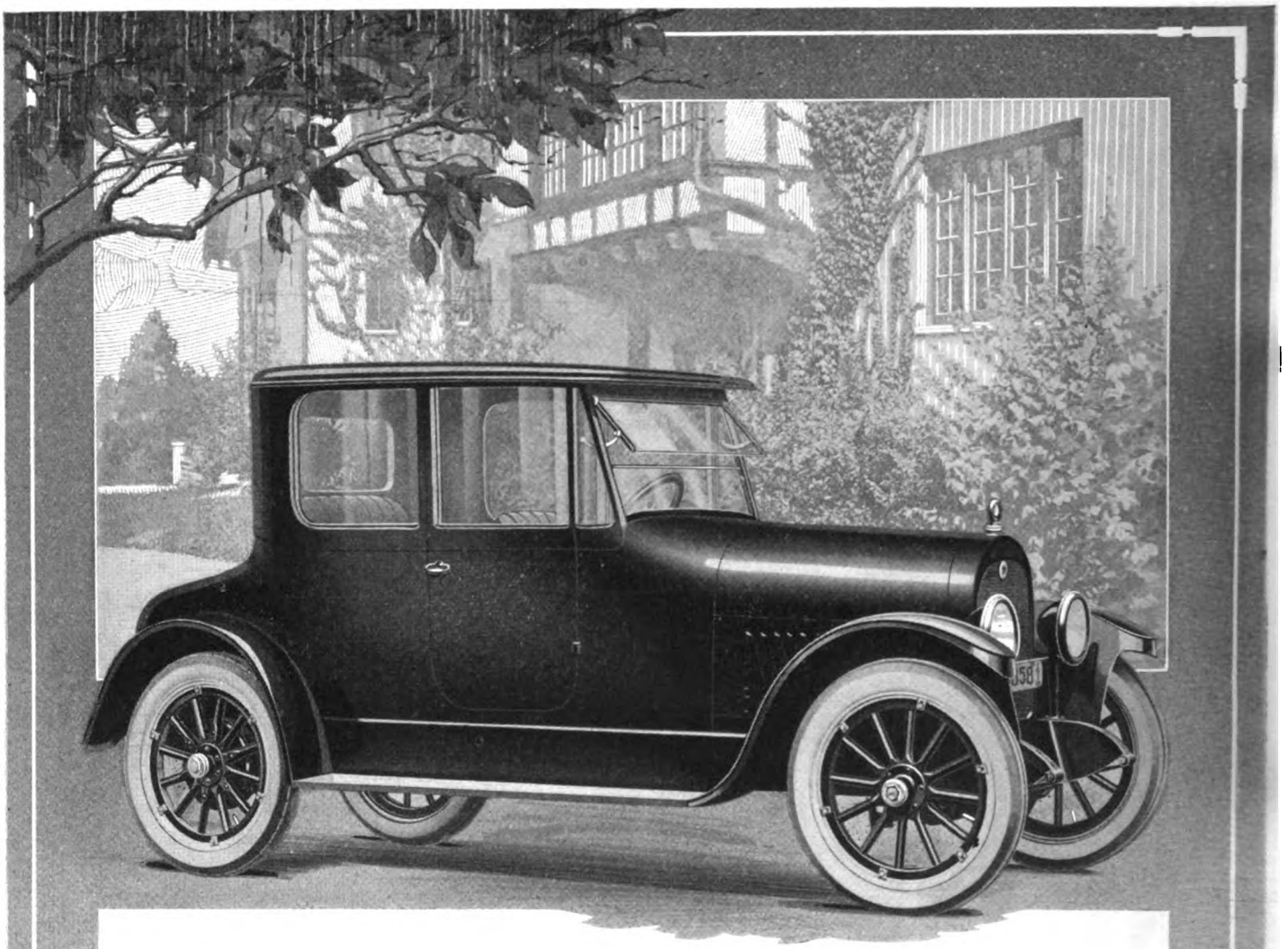


The Other Way

VAN BRIGGLE MOTOR DEVICE CO., 429 *North Capitol Avenue, Indianapolis*

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Westcott Convertible Cars

In the Westcott Six, Series Eighteen, the Westcott engineers anticipated by at least one year the demand for a chassis whose efficiency is altogether independent of weather conditions. This they accomplished by means of a thermostat that automatically controls internal temperature of motor at all times and by the adoption of wick-fed oil cups for all chassis lubrication.

With perfect consistency the Westcott coach designers have anticipated the requirements of the future in the refinement and completeness of the new Westcott Convertible Sedans and Coupes. In every feature of design and appointment these cars easily maintain the Westcott reputation for leadership among builders of sixes.

In order to maintain our distributing organization on the same high level, we make our agency proposition unusually attractive to dealers of proved capacity.

PRICES F. O. B. SPRINGFIELD, OHIO

Seven or Five Passenger Convertible Sedans	$2690
Four Passenger Convertible Coupes	2690
Seven or Five Passenger Touring Cars	1790
Four Passenger Touring Roadster	1790

THE WESTCOTT MOTOR CAR CO., Springfield, Ohio

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MICHELIN TIRES make the strongest magnet of trade



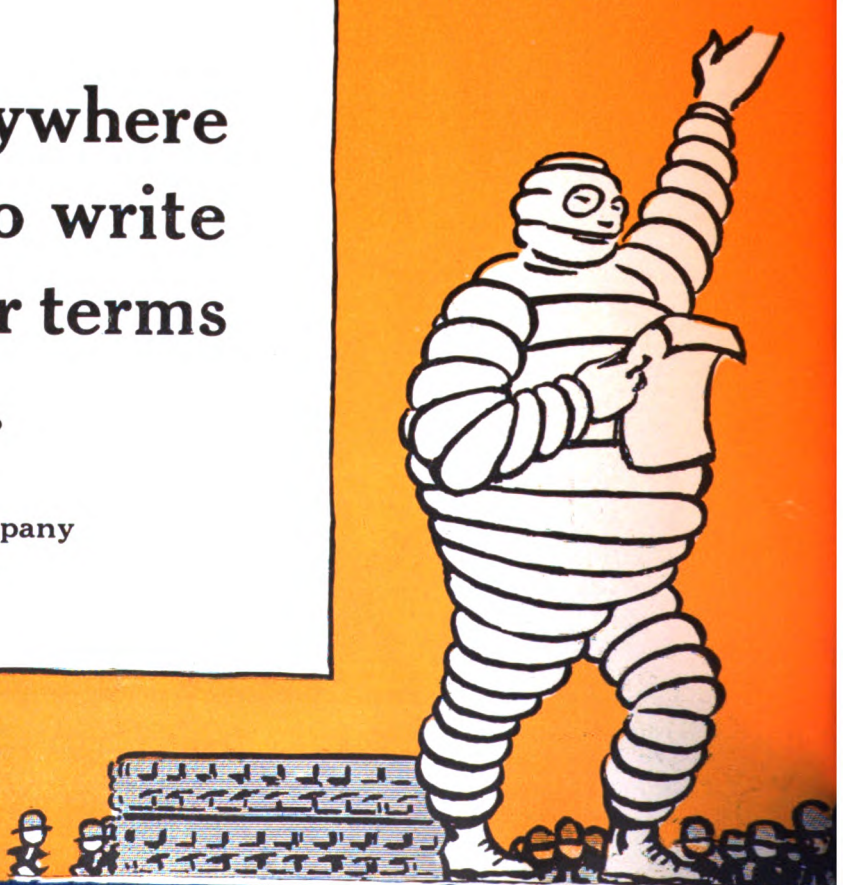
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Announ

MICHELIN'S Sales Proposition for 1918 is now ready.

Dealers everywhere are invited to write the factory for terms and territory.

Michelin Tire Company
Milltown, N. J.



Digitized by Google

cement

IN ANNOUNCING the 1918 Michelin proposition we firmly believe it to be the most attractive from every viewpoint. When we say this we speak from long experience, for, as you know, Michelin invented the pneumatic automobile tire and is the oldest tire maker in the world.

The Michelin proposition offers you:

Quality—unsurpassed by any tire regardless of type or price.

Price—lower than most tires and away below the price of any other tire of anything like equal quality.

Profits—while sold to the consumer at a fair price, Michelin tires show a liberal profit to the dealer.

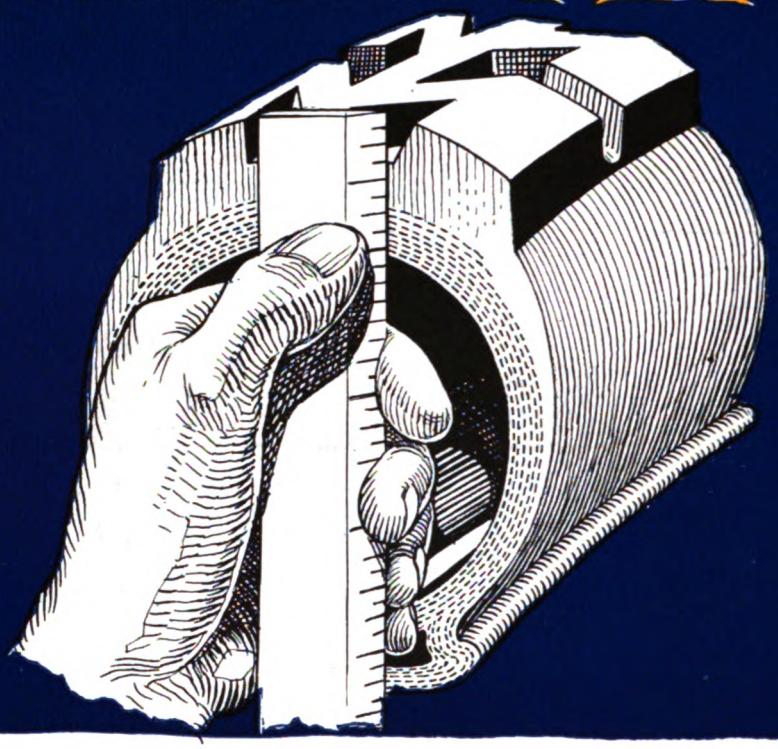
Selling Help—including consistent, forceful advertising and generous support with literature, signs, etc.

Michelin Tire Company
Milltown, N. J.



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MICHELIN



Actual Thickness of 34 x 4 inch
Michelin Universal

Extra Mileage You Can See *and* Measure

Just measure the thickness of a Michelin Universal in comparison with any other tire.

The extra thickness of the Michelin Tread, due to extra rubber and fabric, is bound to mean more mileage.

Remember that every ounce of rubber and fabric, which a Michelin contains, is the toughest that money, skill and experience can produce.

Michelins give so much mileage that they'd be economical even if high priced. But they're *not* high priced.

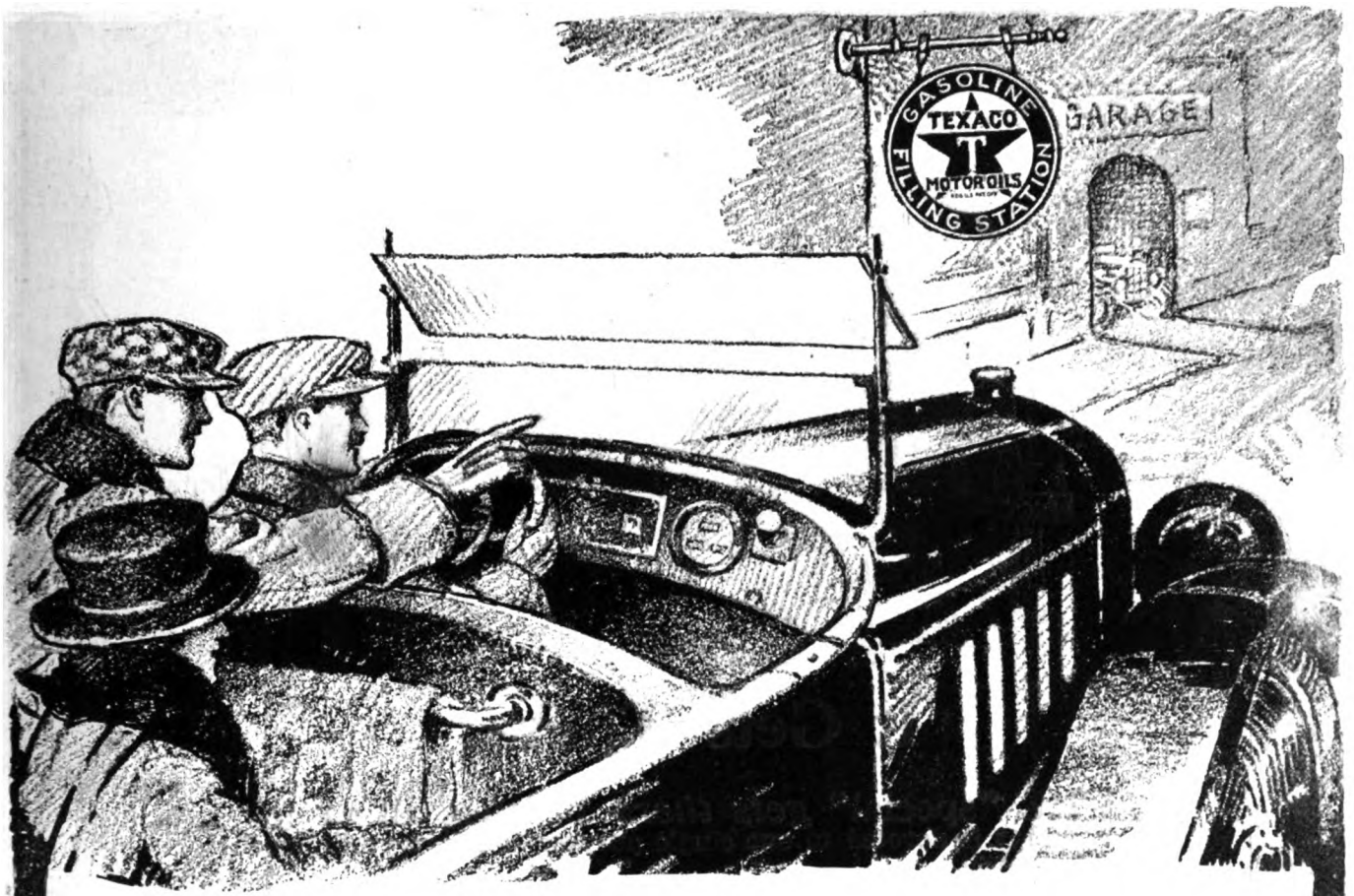
The Michelin dealer gives his customers more for their money than they could get elsewhere. No wonder Michelin dealers are prosperous.

Write for Michelin's Proposition for Dealers

Michelin Tire Company
Milltown, N. J.

Note: All dealers know Michelin Red Inner Tubes are the best in the world and the fastest sellers. Michelin Casings are just as good.

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A Good Sign

IT is always a good sign when you see the Texaco Star in front of a garage or supply shop. It is a sign that you have found the proper place for a supply of gasoline or motor oil.

These two Texaco products have made driving a pleasure for thousands of motorists. Let them do the same for you.

TEXACO MOTOR OIL

has no superior among automobile lubricants. The most painstaking methods of refining applied to a crude oil, the inherent qualities of which are unusually high, produce a lubricant that meets satisfactorily every demand which can be put upon it.

Texaco Motor Oil reduces friction to a minimum thereby enabling your motor to operate at its highest efficiency. It gives a perfect seal between piston and cylinder and allows no gasoline to leak into the crank case. Due to certain basic qualities it *cannot* deposit a hard carbon crust in the motor. If through the feeding of too much oil to the motor any carbon residue should be left it will be in the form of a soft, fine soot that can do no harm and is easily wiped off.

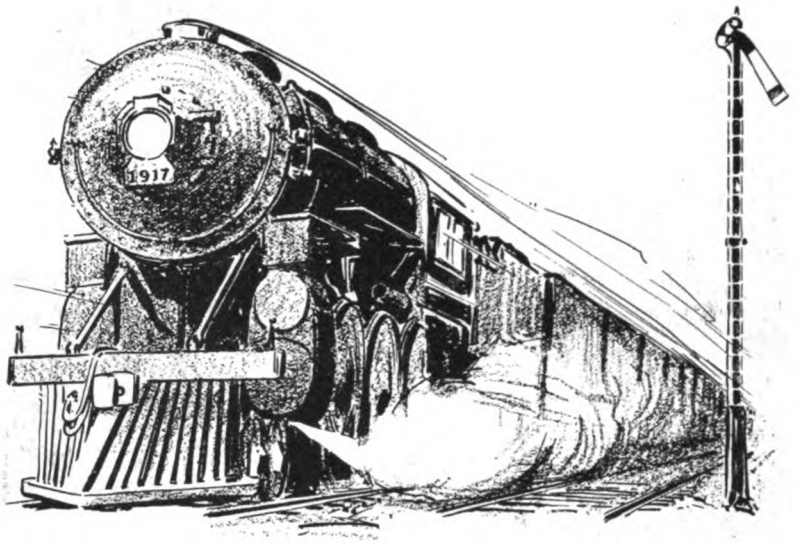
Texaco Motor Oil may be obtained at most good garages. The safest way, the best way, to buy is in one or five gallon cans.

THE TEXAS COMPANY

NEW YORK CHICAGO HOUSTON

DISTRIBUTING OFFICES IN MOST CITIES

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It Gets There!

THE "special" *gets there* because all of its energy is devoted to one single purpose—and everything else is side tracked!

The Gibson business is a "special" business. The energy of the entire organization is devoted to the single purpose of giving the best possible values, service and co-operation in a "special" field.

There are many advantages for the dealer in doing business with an organization like ours, which for years has specialized in a given field. Our vast stocks give you the widest range of choice, and enable us to fill any order instantly. Our facilities for handling your orders, and for making prompt shipments, are unusual.

Know more about what we have to offer you. Get our new 400-page catalog—and let us put you on our permanent mailing list. Free to any legitimate accessory dealer or garage operator—anywhere. Write today for Catalog G-2.

THE GIBSON COMPANY
INDIANAPOLIS

Motor Car Accessories and Tires

Shop Equipment and Electrical Supplies

"Gibson Serves the World"

Digitized by Google

Quality is Economy



THIS IS THE SIGN OF A HOOD DEALER

When you can make a definite claim for a tire you make more than a sale.

You have extended a service that's an asset in more patronage.

The extra plies of fabric is Hood's definite defense against blowouts and tire trouble.

It means more inches of fabric for more miles of service.

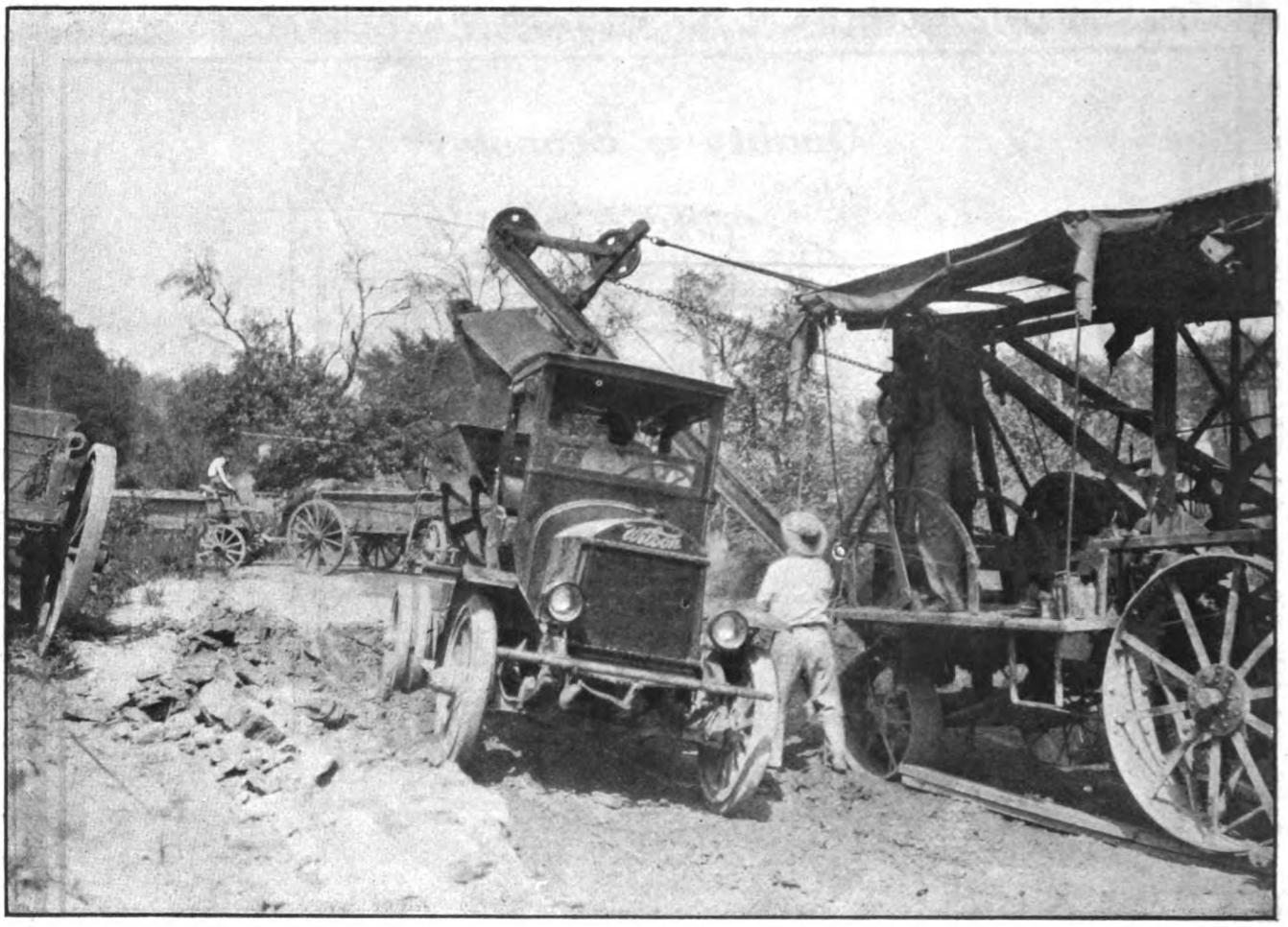
That's why Hood Tires are economical. And you get more per sale because of the Hood special agency plan of protection. Write for the plan.

For overnight service don't substitute. See Automobile Trade Directory and Chilton Directory for list of Hood Tire Distributors.

HOOD TIRE COMPANY, INC.

Watertown, Mass.

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WILSON TRUCKS

There is no one outstanding unit in the make-up of a Wilson Truck. It is one harmonious engineering triumph that will not permit the featuring of any one particular unit. That is why Wilson Trucks deliver maximum service. Dealers will find our proposition attractive.

J. C. WILSON COMPANY
489 Warren Avenue, West, Detroit

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Higher in Quality

In that we have succeeded
—in establishing higher standards
—of engineering—of materials—of workmanship.
In that we have succeeded
—in equalizing the greater cost of higher quality
—by scientific low cost production methods.

Therein have we established our right to the earnest consideration of every producer of motor cars who would avail himself of better axles than are obtainable elsewhere, without excess cost for the excess value.

And thereon we base our invitation to motor car producers to searchingly investigate our product and our methods.

The Columbia Axle Company
Cleveland, Ohio

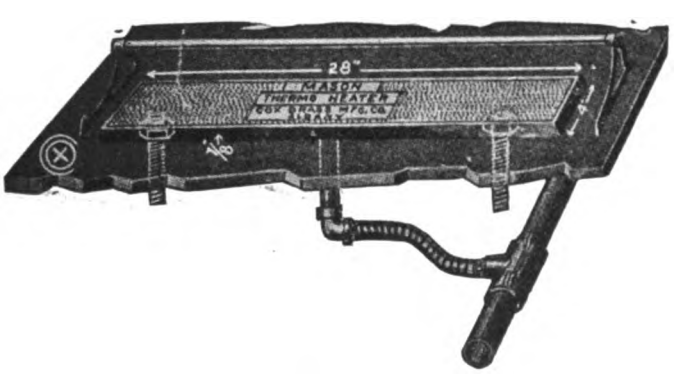
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Pullman Comfort *for* Winter Touring

With your Touring Car or Limousine heated by direct radiation from a heater supplied from the exhaust and automatically kept at an even temperature by a specially devised adjustable thermostat—your car is as comfortable in winter as a Pullman.



THERMO AUTO HEATER



PRICES
Polished Cast Aluminum . . . $18.00
Cast Iron, Black Enamel $12.00

is the heater that has given the best results and satisfaction of any on the market.

It is built simply and compactly, and **will not overheat, get out of order or leak gas.**
It can be installed quickly and removed without damage to the car.

It sits firmly on the floor of the car instead of being set in it. The heater is raised 1/4" from the floor.

The Thermo Auto Heater is made in two sizes, oblong 28" x 4" x 7/8", square 8" x 14" x 7/8"—occupies little space—will fit any car. The thermostat—which regulates the heat—is adjusted by a button at the side to suit different temperature conditions.

THE THERMO AUTO HEATER is the best car heater on the market.

For this reason **DEALERS** find this heater easy to sell. It is handsomely finished and is very attractive to display. Write for proposition.

COX BRASS MFG. COMPANY

ALBANY **Established 1872** **NEW YORK**

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REPUBLIC Prō-dium Process Tires inspire the user with a loyalty and enthusiasm seldom given to a commodity.

He is not satisfied with other tires and therefore becomes a permanent asset to the Republic dealer.

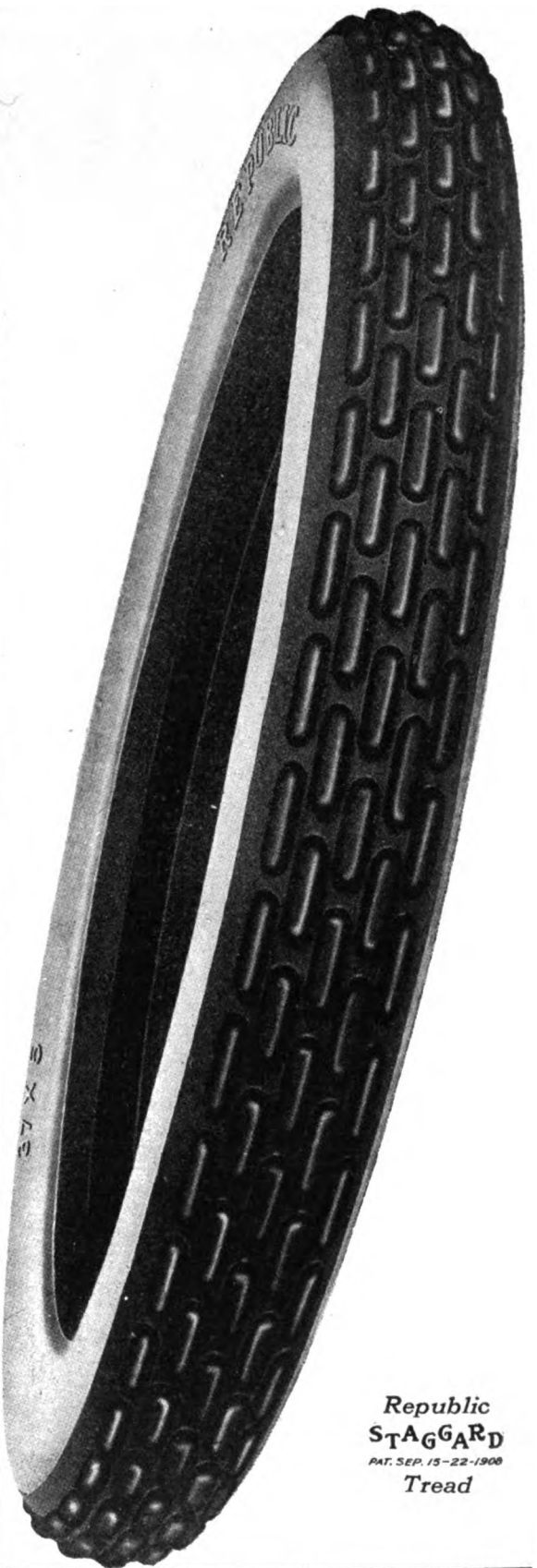
We desire only dealers of exceptional standing to represent us.

To a limited number of these we will allot the franchise to sell Republic Tires.

Republic Black-Line Red Inner Tubes have a reputation for freedom from trouble

The Republic Rubber Company
Youngstown, Ohio

Originator of the First Effective Rubber Non-Skid Tire
Republic Staggard Tread



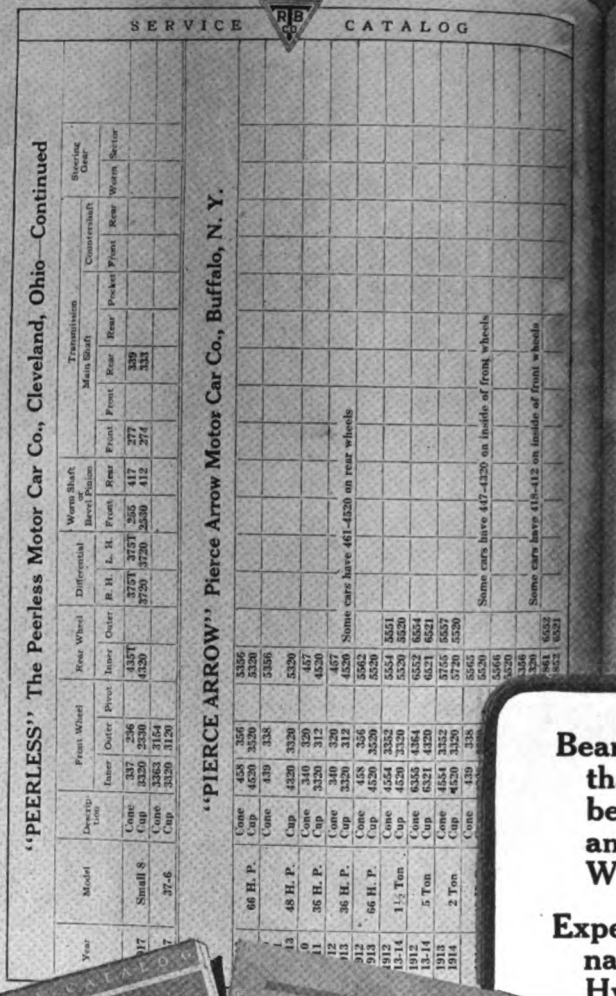
Republic
STAGGARD
PAT. SEP. 15-22-1908
Tread

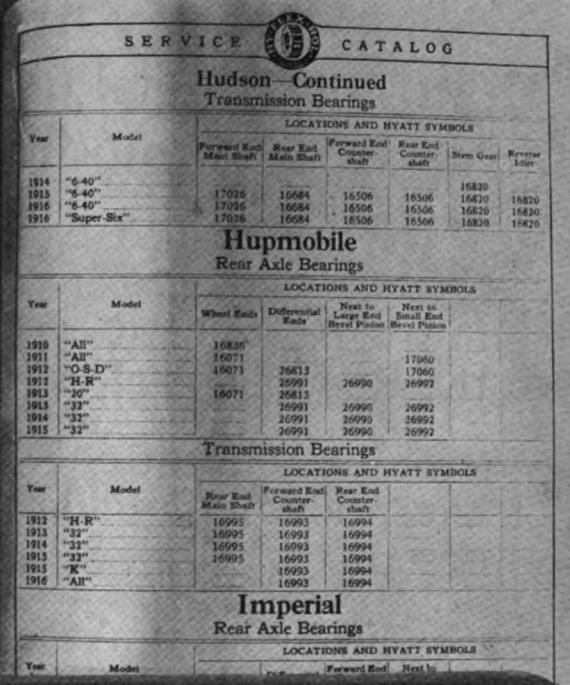
REPUBLIC TIRES

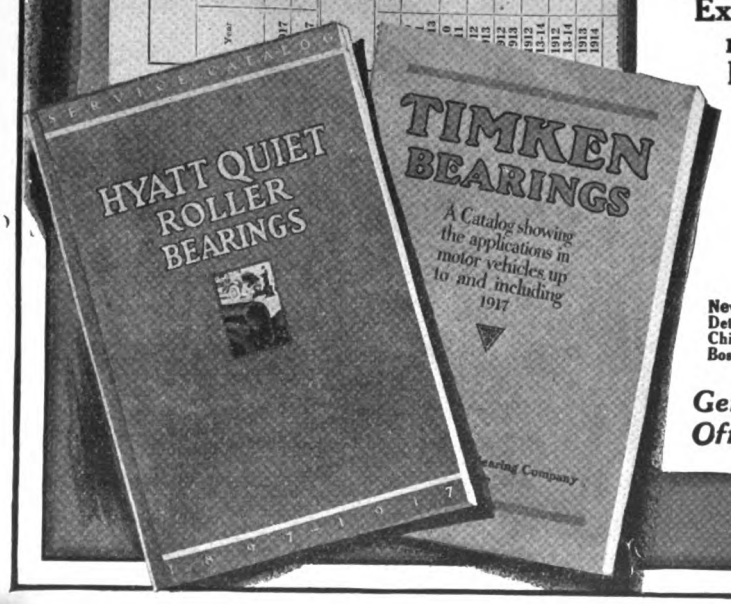
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Bearings Service Books

—Yours for the asking—







Bearings data books, valuable books that will help you to know the exact bearing needed for any location in any motor car—we'll send you free. Write the branch nearest you.

Expert bearing service by the exclusive national representatives of Timken, Hyatt and New Departure bearings.

BEARINGS SERVICE COMPANY

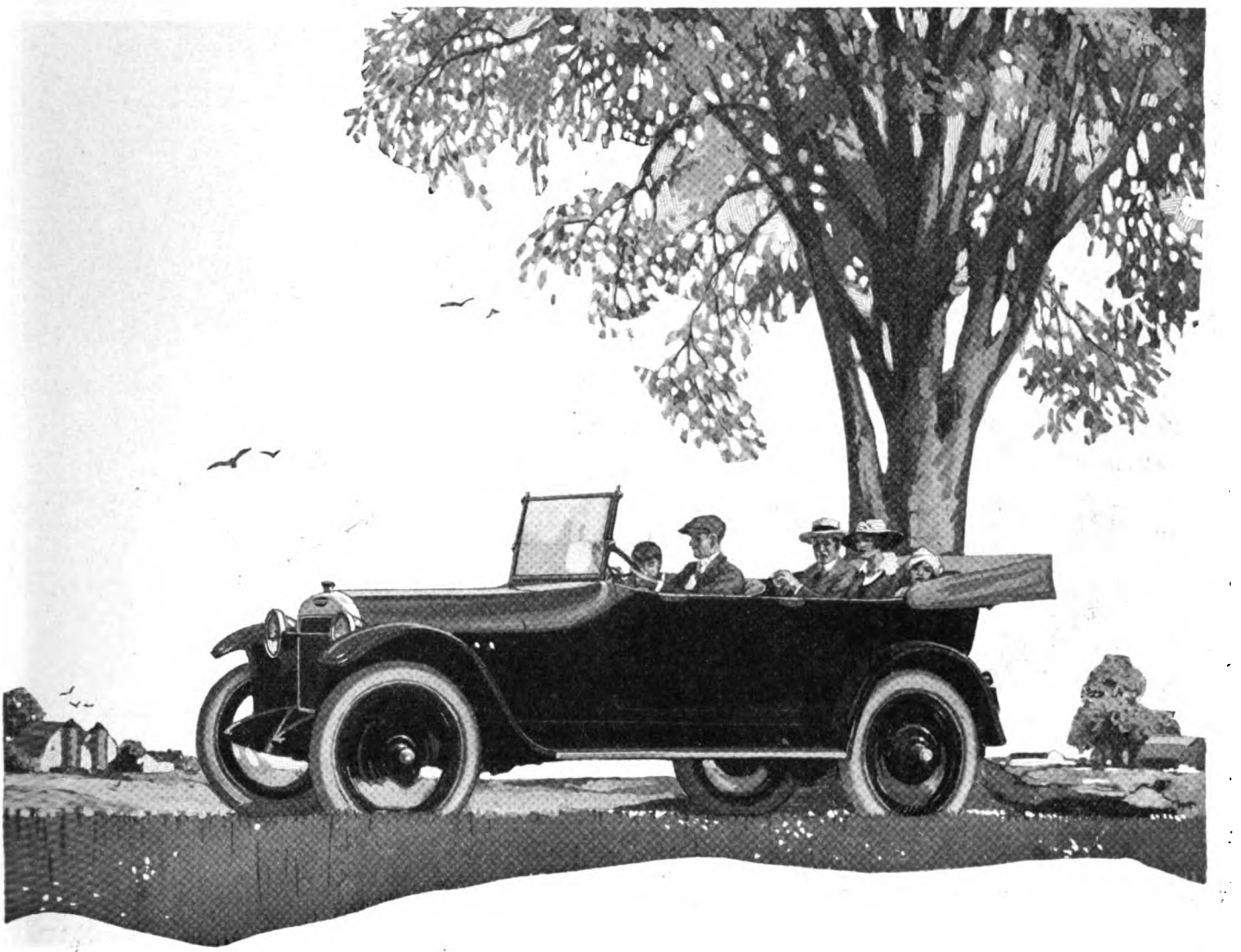
Branches in all Principal Cities

New York, Detroit, Chicago, Boston, San Francisco, Los Angeles, Atlanta, Seattle, Minneapolis, Kansas City, Dallas, Cleveland, Denver, Indianapolis, Rochester, Philadelphia, St. Louis, New Orleans, Omaha, Pittsburg, Portland, Ore., Toronto, Can.

General Offices *Detroit, Michigan*

BEARINGS SERVICE COMPANY

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A NEW CAR EAGERLY WANTED

THE introduction this month of the new Oakland Sensible Six will serve to demonstrate that more and more people are responding constantly to Oakland ideas and ideals.

This new car faces an *unlimited* demand—a demand set in motion by former Oaklands and now intensified by the further development in this latest model of the basic Oakland principles of high power, light weight, comfort and economy.

The new friends who are being attracted by this new Oakland Sensible Six will represent actual and permanent gains for dealers because sales made to them will be entirely *additional* to sales made to present Oakland owners. Oakland buyers of previous seasons are known to take an appreciable percentage of the Oaklands produced each year.

The *stability* of Oakland Sensible Six construction, representing improvement instead of change in fundamentals, has the effect of stabilizing the dealer's business—of putting under him the foundation stones of Confidence, Satisfaction and Constant Recommendation.

In the motor of this new Oakland Sensible Six scientific provision has been made for higher efficiency in the use of commercial gasoline.

The overhead-valve high-speed engine at 2600 r.p.m. delivers 44 horsepower, or one full working horsepower to every 48 pounds of car weight.

These facts reflect a car of convincing performance, economy and value made possible by immense buying power coupled with a manufacturing policy both *sensibly* conservative and *sensibly* progressive.

Oakland Motor Car Company, Pontiac, Mich.

Scientific construction makes the touring model the lightest car of its size, power and stamina on the market.

Touring Car	*$ 990*
Roadster	*990*
Coupe	*1490*
Sedan	*1190*
Roadster Coupe	*1150*

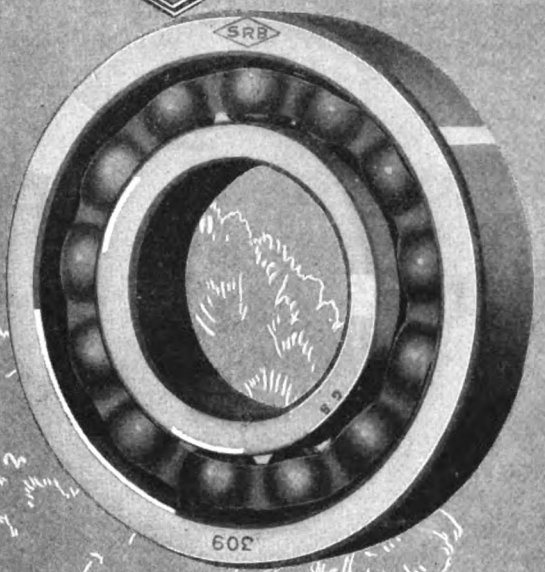
F. O. B. Pontiac, Mich.

OAKLAND SENSIBLE SIX

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SRB

MAXIMUM SILENT ANNULAR BALL BEARINGS



Frequently one type of bearing works a tremendous saving over another. Under certain load conditions, a smaller bearing very often can be used with the same satisfaction and service as the larger one. Sometimes by making a slight change in application, greater efficiency can be obtained.

We are always ready to solve such problems without bias and without charge. You will find our engineers qualified by training and experience to give expert advice in the selection of bearings for any purpose. By submitting your plans to us, sending, if possible, blueprints or sketches showing the application and giving complete information regarding speed, load and shaft size, you can be assured that most satisfactory results will be obtained.

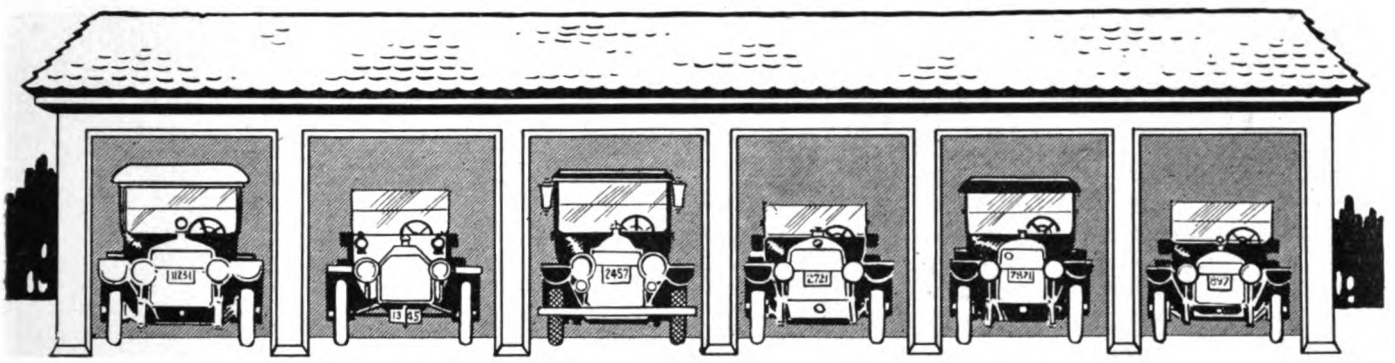
STANDARD ROLLER BEARING CO.

PHILADELPHIA, PA., U. S. A.

Makers of S R B Annular Ball Bearings, Ball Thrust Bearings, Taper Roller Bearings, Steel Balls and *Rudge-Whitworth* Wire Wheels

SALES OFFICES:
1852 Penobscot Bldg., Detroit, Mich
2206 Michigan Ave., Chicago, Ill.
822 Hume Mansur Bldg., Indianapolis, Ind.

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Make Big Money by Feeding These Horses

Feed them Glidden Endurance Auto Finishes. There's good profit in it for you.

You can get a profit from every automobile in your community. Picture it! Every automobile means a buyer—present or future—of Glidden Endurance Auto Finishes.

Automobiles are well finished when made. But wear and weather, dust, mud and grease, neglect and accidents, all act to destroy the finish. Every motor car needs to be finished once a season—at least.

Every owner selling a used motor car should refinish it and add to its value. Every buyer of a used motor car should refinish it and have it look like new.

Paint Your Ford for $1.00

This is the big Glidden message that's going out to hundreds of car owners all through the year. Big National Magazines will help you create the demand. Tell your customers to paint their own cars.

They can do it themselves—easily, conveniently, economically, quickly. They will do it themselves if you tell them all the reasons why they should use Glidden Endurance Auto Finishes.

Write To-day for Our Extra Special Offers

We have prepared several special offers which include the complete Glidden Auto Finish line, a full set of new advertising (everything you'll need for quick selling).

These offers are made for a short time only, and are subject to withdrawal without notice. The present price situation suggests quick action. So drop us a line (postal or wire) and get full details.

THE GLIDDEN VARNISH CO.

Manufacturers of Glidden Pale Wearing Body Varnishes, Quick Rubbing Varnishes, Fender Finishing Enamel, Colored Rubbing Varnishes, Red Metal Primer, etc.

Cleveland, Ohio

Factories: Cleveland—Toronto

Branches: New York—Chicago—London



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Carrying Hyatt's Message to American Motorists

Eastward over the Alleghenies to the Atlantic, and westward over the Rockies to the Pacific, the world's long-distance car is bearing to American motorists its message about Hyatt Bearings.

Traversing the country from coast to coast—over mountains, valleys, deserts, plains—the "Hyatt Roller" continues to prove, by this strenuous test, the limitless endurance of Hyatt Roller Bearings in automobiles.

Over 267,000 miles—more than ten times around the world—is this car's present record. All this mileage has been made on a single set of Hyatt Bearings.

Such is the service which motorists may reasonably expect from Hyatt Bearings in their own individual motor cars.

HYATT
QUIET BEARINGS



Mount Shasta, California's Highest Peak, as seen from the "Hyatt Roller"

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Vesta Dealers

Know Why Their Business is *Big* and *Profitable*

Three Great Vesta Triumphs

The Indestructible Isolator positively locks the plates apart and prevents short-circuits. Entirely immune to the attacks of battery acids.

The Impregnated Wooden Mats absorb battery acids as freely as ordinary mats and form a perfect path for the current, yet prevent "treeing" and its disastrous consequences.

Titanium, a rare mineral, hardens the lead plates, giving them longer life. It precipitates all minerals and impurities in solution and adds vastly to the efficiency of the battery.

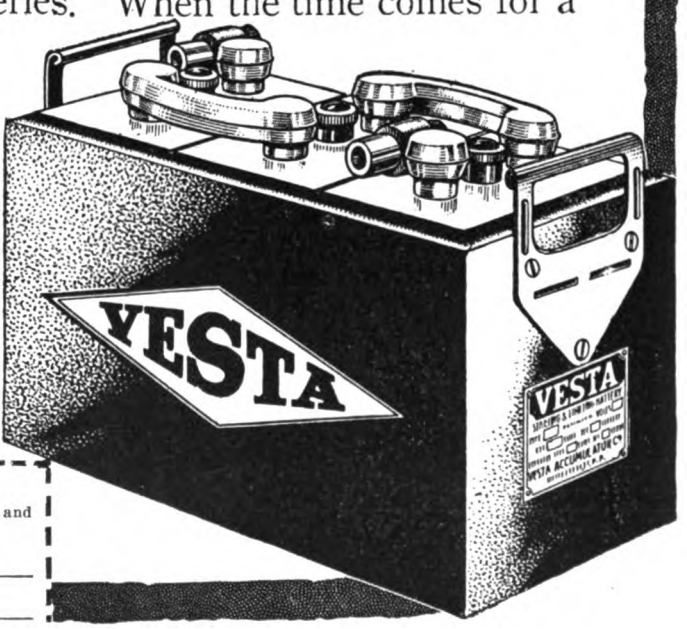
Vesta Success

stands on the tripod of the three features of VESTA superiority—and this superiority is being made known everywhere by enthusiastic users and by advertising.

Vesta Batteries have *real* advantages. The three Vesta triumphs of construction *show results,* in longer battery life, and freedom from lowered efficiency and other trouble while in use.

And this better battery service to automobile owners is *showing results* — in bigger and more profitable business for Vesta *dealers.*

Become a Vesta dealer and get a share in the big replacement business being done with Vesta Batteries. When the time comes for a motorist to *choose* the battery for his car nothing but battery ignorance can keep him from choosing the Vesta—and automobile owners are fast getting battery wise.



Fill out and mail the coupon today for our dealer's proposition.

VESTA ACCUMULATOR CO.
2103 Indiana Avenue Chicago, Ill.

DEALER'S COUPON

VESTA ACCUMULATOR CO., 2103 Indiana Ave., Chicago, Ill.
Please send information on the VESTA DOUBLE-LIFE STORAGE BATTERY and your SERVICE STATION PLAN.

Name _____

Address _____

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PHONE WAVERLY 1323
TELEGRAMS
FERGUS MOTORS
NEWARK

FERGUS MOTORS (OF AMERICA) INC.
370 JELLIFF AVENUE
NEWARK, N. J.
U. S. A.

FOREIGN OFFICE & WORKS
J. B. FERGUSON, LTD.
BELFAST,
IRELAND

Friday Sept. 14, 1917

American Bronze Company
Berwyn, Pennsylvania

Attention of Mr. V. W. Dow

Gentlemen:

Replying to your letter of September 7th, asking us for information as to the uses of Non-Gran Bronze in the Fergus Motor, we can give you the following:

Rear axle drive is through a torque tube carrying a ball end where it attaches to the cross member. The front and back half of the bearing for this torque tube ball is Non-Gran.

The camshaft is overhead. First bearing immediately back of the camshaft spiral bevel gear is Non-Gran.

The bearings carrying the spiral bevel gears at the top and bottom of the vertical shaft are Non-Gran.

The Magneto and pump cross shaft bearings, two in number, are Non-Gran.

The Universal joint rings are Non-Gran.

There are two Non-Gran bushings in the steering gear.

There are three Non-Gran bushes in the electric starting motor drive.

Tire pump connecting rod is a tubular affair made out of Non-Gran. There are two Non-Gran bushings holding up the tire pump shaft.

The generator idler gear is mounted on two Non-Gran bushings.

Speedometer front and rear drive gear bushings are mounted on Non-Gran.

Clutch gear bushing is Non-Gran as is also the clutch shaft pilot bearing.

We are inclosing under separate cover, six copies of the "Autocar" describing in detail the Irish Fergus Car, the essential features of which have been maintained in the American Fergus Car.

We appreciate very much the attitude that your Company has maintained toward us and wish to have it continue so.

Yours very truly

FERGUS MOTORS, INC.

J. A. Moncreiff

VIM/BEW

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Show Your Customers How To Make "Winter Driving Comfortable"

Your customers don't know until you tell them what comfort can be had in winter driving. See that they are told—make them realize that the Automobile as a utility is of greater value than as a luxury or for pleasure.

If ever a man and his family needed his car, it's in the winter when every condition makes out of doors a Bug-a-Bo and the home fireside the Mecca in the day's work.

Show him how he can add to his health and comfort by the proper use of the goods you have to sell.

Don't let him find it out. Tell him. Don't ask him to come to you. Go to him.

You Can Have a Very Profitable Show of Winter Goods in Your Own Place of Business

There are a large number of items that are designed by the manufacturers to "Make Winter Driving Comfortable." The enclosed Car is only one. Close on this comes the winter top—then Heaters of all kinds, Hand Warmers, Primers, Robes, Coats, Gloves and so on down the list. You have in stock or should have all these items. Why don't you make a real display? Take both your Car and Accessory Sales Room for it and make a week's event of a show of your own—then invite the Car owners in. Use plenty of advertising. Use the Phone, stir things up—show you are alive.

Your Jobber Is Anxious to Co-operate

Every Jobber in America is interested in the great Campaign to help you "Make Winter Business Profitable." If you don't call on him for his support and help in planning your Winter Business you are passing up the Co-operation that he will be glad to give.

Every Jobber's Salesman is equipped with literature that the manufacturers will gladly furnish you. He knows the plans of his house to assist you. Ask him about it and you may be sure he will be glad to help.



National Association Automobile Accessory Jobbers

CHICAGO, ILL.

Wm. Webster Commissioner, City Hall Square

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AC Spark Plugs

The Standard Spark Plug of America



Special for Ford Cars
A C CICO



⅜" Regular
For Maxwells
A C TITAN



½" Regular
For Willys-Overland
A C TITAN



½" Regular
For Studebakers
A C TITAN

AC Plugs have proven to be the best under all conditions. That is why 80 manufacturers of Automobiles, Trucks, Tractors and Aeroplanes use them for regular equipment. The leading race drivers are using them. *Your* motor will not give its best performance unless equipped with AC. You will come to them in time. Why not buy a set *now* and note the improvement?

CHAMPION IGNITION COMPANY, Flint, Michigan, U. S. A.

Crane PATENTED

Engine-Driven Tire-Pump

DOES what *no* other pump *can* do. Because BUILT as *no* other pump *can* be built.

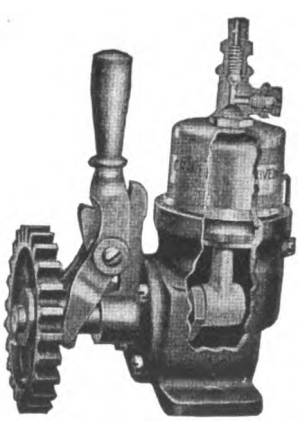
Piston works *through* a Packing-Ring, reducing wear to the *minimum*. Beveled base of Ring shaves surplus oil off piston at every stroke. Permits ample lubrication, but prevents oil passing Ring.

Ring is endless. No gaps for air to leak out or oil to leak in. Can be instantly adjusted (by turning cylinder) to maintain airtight, oil-proof fit, and insures 97% efficiency.

This high efficiency enables the CRANE to do the work of pumps twice its size, weight and parts.

And small size, light weight, few parts and simplicity mean low production-cost.

That's why the CRANE sells for $10 complete despite high-grade materials and finest workmanship.



The full story of the CRANE and its patented Packing-Ring is told in an interesting little Folder—just off the press. Write for FREE copy to-day.

BAY STATE PUMP COMPANY

100 Purchase St., BOSTON, MASS.

Export Dept., 100 Broad St., New York

115

This sign in YOUR window



hooks you up with the advertising and reputation of



Sign is handsomely colored

Tuthill Titanic
Lubricated Springs

Motorists know that the "Service Sign" pictured above means break-proof springs and 'top notch' spring service. They look for it on the dealer's window—it *brings* and *builds* business.

More spring replacements are made with Tuthill Titanics than all other makes put together.

Tuthill dealers are not required to carry heavy stocks of springs. Our distributors located at convenient points in every part of the United States carry *complete stocks* ready for immediate shipment.

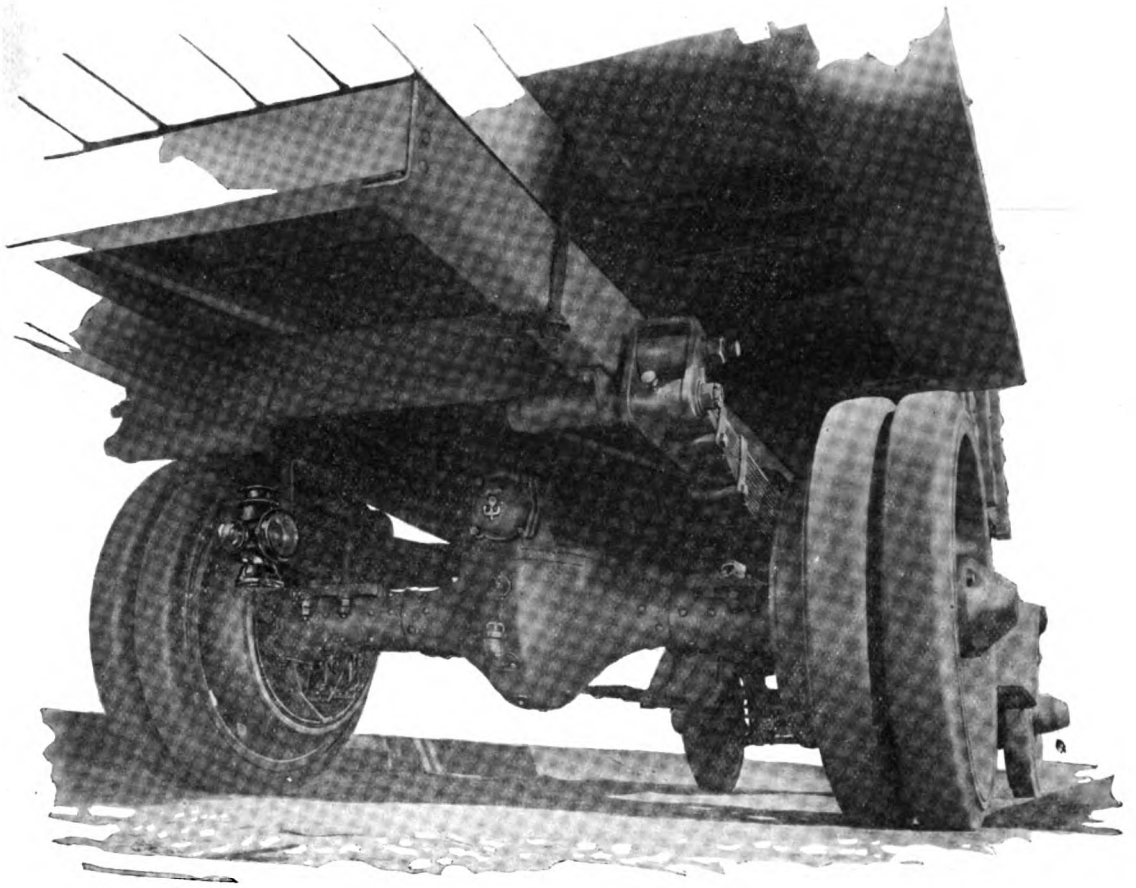
Our proposition to dealers will interest you — write for it and name of nearest distributor. Ask for this business building sign and our poster price list.

Tuthill Spring Company

(Established 1880)

760 Polk Street Chicago, Illinois

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Grinding the Powerful Brake Drums Before Assembling.

BRAKES

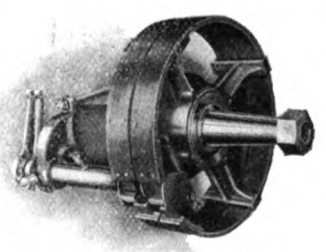
That Hold Fast

There's no road grade, on the up and down face of this old earth steep enough to stump Sheldon Brakes.

For positive protection these double internal expanding brakes have no equal. They have generous bearing surfaces which are doubly enclosed to protect them and they are easily accessible for relining.

The Sheldon Worm Gear Semi-floating Rear Axle is built in every part with the sole idea of service.

Write for further Sheldon information.



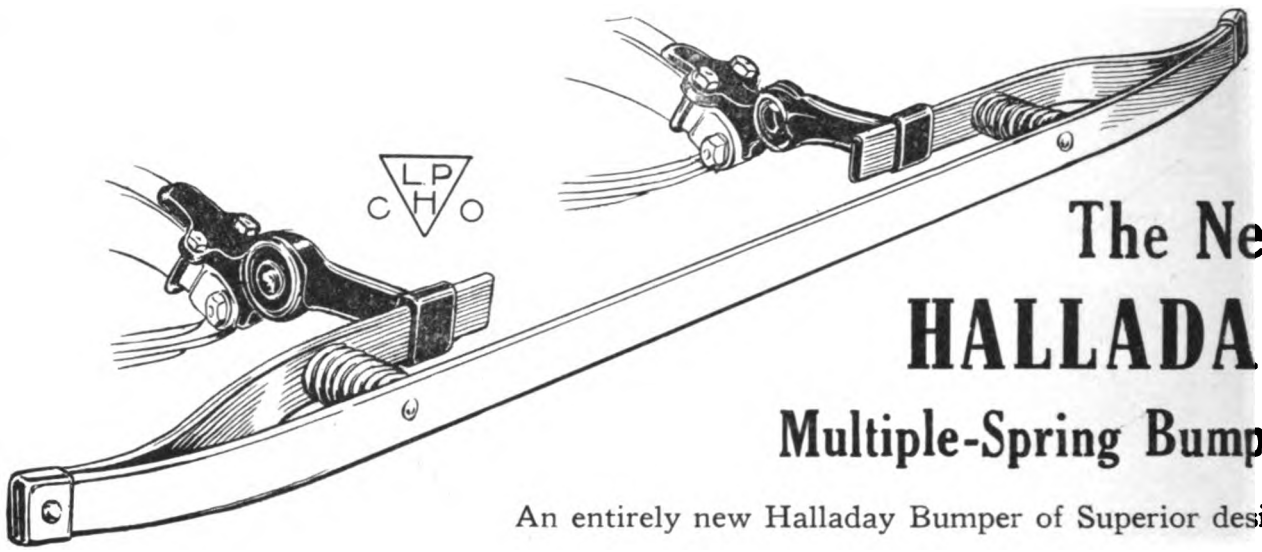
Note accessibility and simplicity of adjustment.

SHELDON

WORM GEAR AXLE

Sheldon Axle & Spring Co., Makers of Springs and Axles for heavy duty service for over fifty years **Wilkes-Barre, Penna.**

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The New HALLADAY Multiple-Spring Bumper

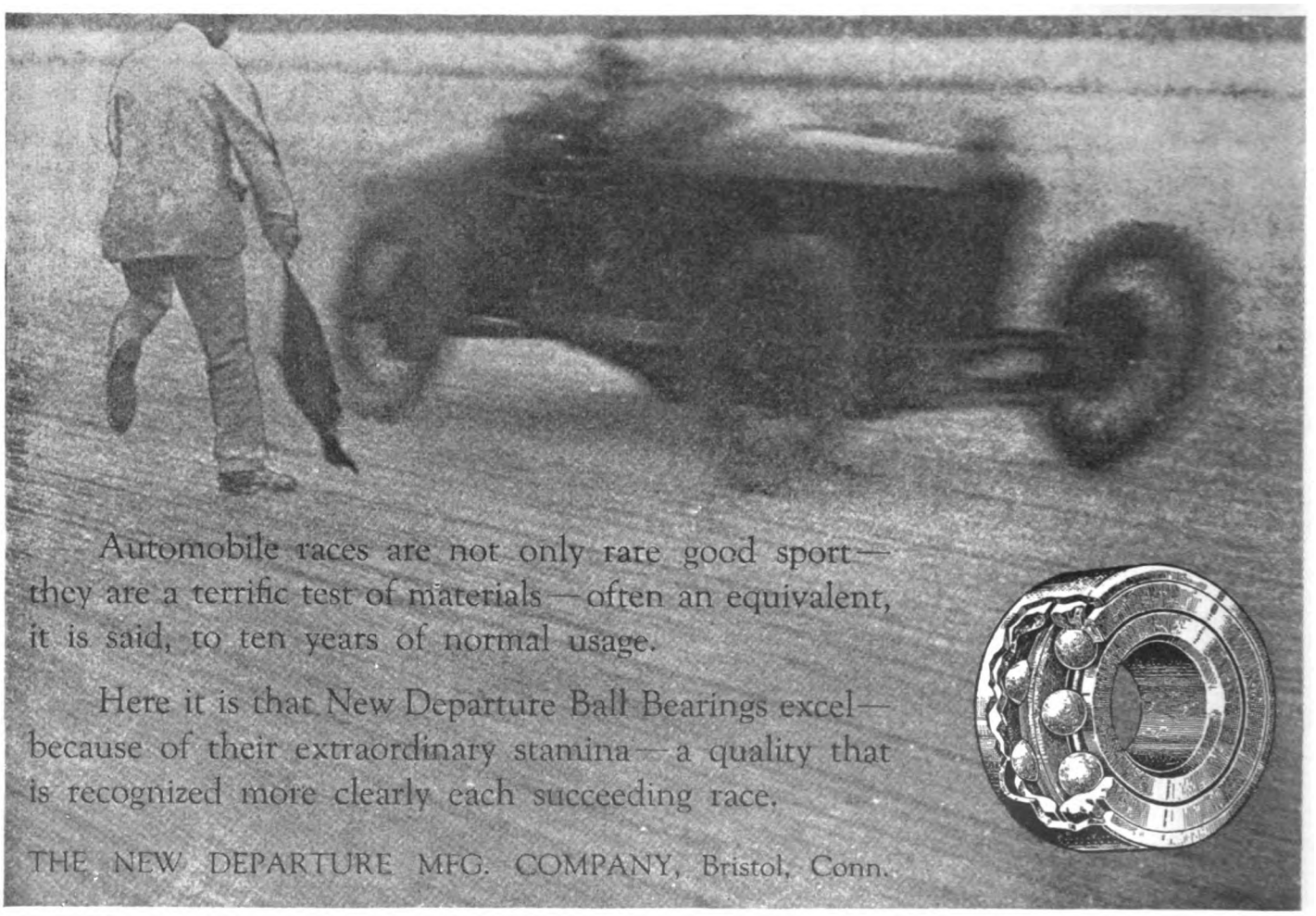
An entirely new Halladay Bumper of Superior design.

The HALLADAY Multiple Spring Bumper is triply shock resisting, being fitted with a spring bar and having a cushion of two large coil springs between the bar and the arms of the frame fittings which are of the sleeve and plunger type, each containing a heavy coil spring. The strongest and at the same time most resilient bumper on the market today.

YOUR DEALER CAN SUPPLY YOU

L. P. HALLADAY COMPANY, Streator, Illinois

DISTRIBUTORS: Asch & Co., 16-24 W. 61st Street, New York City; Cray-Heath Co., 1440 Michigan Avenue, Chicago, Ill.; E. L. Thompson Co., 317 Boylston Street, Boston, Mass.; Sanford Brothers, Chattanooga, Tenn.; Southern Distributors; Hughson & Merton, Inc., San Francisco, Los Angeles, Portland and Seattle, Pacific Coast Distributors.



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3,500,000 Car Owners Are Prospects!

JOHNSTON CURTAIN WINDOWS
OF BEVEL PLATE GLASS-FOR OPEN CARS

They solve the top problem—and the used car problem; make every car an all-season car—take the winter "sag" out of the automobile business—immediately create millions of dollars of business for dealers and trim shops.

At last—a completely successful window for open car tops and curtains. Of bevel plate glass and nickel—handsome as a mirror.

Does away with celluloid—shuts out dust, wind and winter—assures all-round outlook and safe driving—delights woman motorists. A wide selection of window shapes enables every owner to give his car style and individuality.

Ingeniously cushioned in wood—a patented construction that's trouble-proof, folds with the top; *never* breaks, rattles or pulls loose.

Many dealers have proved that Johnston Windows speed up new car sales. Trimmers who set Johnston Windows are crowded with work!

Ask us for Curtain Window Style folder "W." And for sample windows and particulars, write or wire your jobber of trimming materials, automobile supplies or hardware—today!

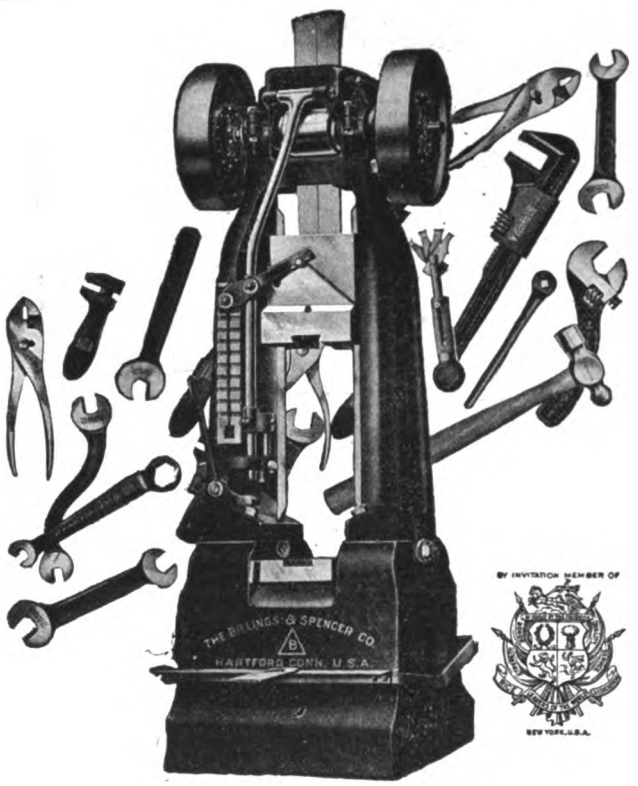
Wm. R. Johnston Mfg. Company
359-61 E. Ohio Street, Chicago

This trademark appears on every rim — JOHNSTON PATENTED —a protection and a friendly warning

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TRADE MARK

Billings & Spencer Drop Hammers



FOREMOST among the developers of the Drop Hammer in this country was the Billings & Spencer Company. Throughout the world today hundreds of these powerful machines are engaged in forging from steel, copper, brass, aluminum, an endless variety of products.

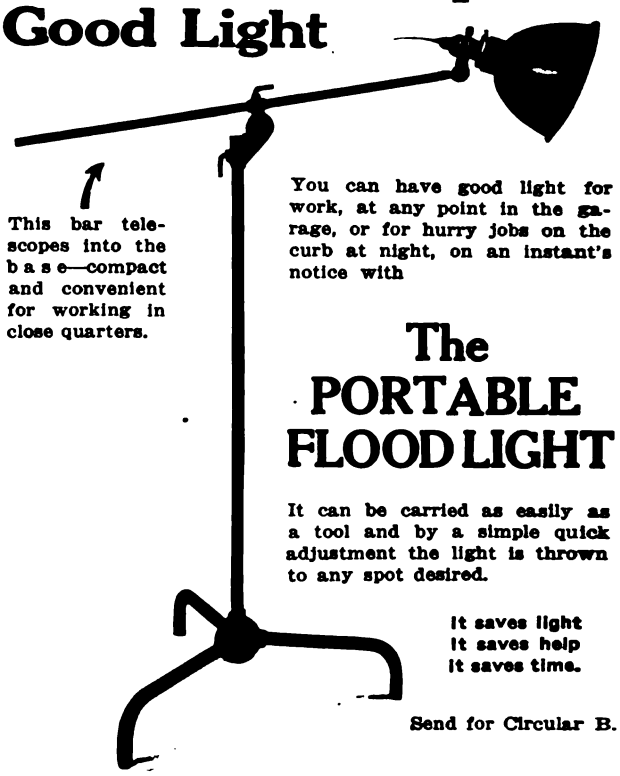
As the progressive dropforgers of America the Billings & Spencer Company have led the way in developing the Drop Hammer to its modern great efficiency. Billings & Spencer Drop Hammers have been adopted by the leading industrial concerns of the country and by contractors to the governments of the world, among them being:

United States **Russia** **Holland** **England**
France **Italy** **Denmark** **Sweden**
Norway **Canada** **Australia**

For more than half a century triangle trade-marked tools of all descriptions have been forged on Billings & Spencer Drop Hammers. These tools can be purchased from hardware and motor accessory stores everywhere and are unconditionally guaranteed.

THE BILLINGS & SPENCER CO.
HARTFORD, CONN. U.S.A.

Good Work Requires Good Light



This bar telescopes into the base—compact and convenient for working in close quarters.

You can have good light for work, at any point in the garage, or for hurry jobs on the curb at night, on an instant's notice with

The PORTABLE FLOOD LIGHT

It can be carried as easily as a tool and by a simple quick adjustment the light is thrown to any spot desired.

It saves light
It saves help
It saves time.

Send for Circular B.

COFFIN VALVE CO., Boston, Mass.

LEWIS VALVES Toledo

To Your Specifications

High quality materials and accurate workmanship are the two factors that make Lewis Valves stand ahead of the rest.

We make valves exclusively and can handle large or small orders. Lewis Valves will be made to your specifications if desired, but they will be heat treated by the Lewis method which means long wear and more power.

Lewis Electric Welding & Mfg. Co.
TOLEDO, OHIO

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SAFETY AND CONVENIENCE



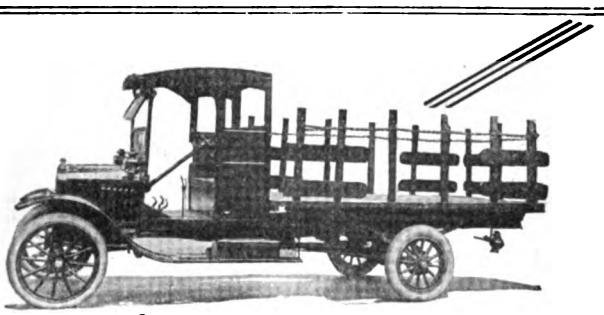
LET BILL STOP THIS FOR $3.50

ANY ONE CAN INSTALL BILL WITH THE ORDINARY FORD TOOL KIT

The Bill Automatic Spark Retarder is just like a friend who knows all about ignition, sitting at your wheel while you crank.
Without any attention whatever from you he retards the spark to a point of perfect safety when you engage the crank and as soon as the engine starts he advances the spark to the running position.
This combination service action saves you from injury from a kick-back, and prevents your motor from stopping when you don't run quickly back to the wheel to advance the spark.

Put Bill on Your Ford To-day.
Dealers: write for terms and territory.

Bill Mfg. Co., La Porte, Indiana



DEPENDABILITY

Makes Greater Profits for Users of

OLSON UNIT 1-TON TRUCK

Statistics gathered from thousands in daily use show that OLSON Unit 1-Ton Trucks, once put on the road, stay in service.

This dependable truck, operating at lower cost per ton-mile, insures a tremendous saving that brands it unconditionally *the best to buy—the easiest to sell.*

Write Today for Our Interesting Offer.

SWEDISH CRUCIBLE STEEL COMPANY
Factory and General Offices, Detroit, Mich.
Chicago Branch: 1344 Michigan Avenue.



Cold Weather Driving

Is becoming more popular each winter. Motorists make themselves comfortable by extra clothing. The engine in their car may be protected in a similar way through the use of

Invincible

Radiator and Hood Covers

These are made of extra heavy fabrics, hand tailored to fit any make or model of automobile; are easily and quickly put on and give perfect protection from the weather.

Every one sold means more cars in operation during the winter and therefore more profits to the accessory dealer.

If you do not have our catalog send for it at once.

The
Peters & Herron Dash Company
77 S. Gift St., Columbus, O.

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THE ARMOR PLATE OF STEEL EQUIPMENT BERGER MODERN BUSINESS

SERVICE



THE OHIO BUICK SERVICE BUILDING, Cleveland, illustrated above, is an excellent example of a fully equipped garage and service station building.

The equipment installed was selected with one idea in view—to render the quickest service in the least time.

Berger Steel Bins and Shelving

are used to stock all the various parts for more than 30 models of the Buick car, as well as a large variety of supplies used by automobilists.

Confusion, lost materials and wasted time are eliminated because everything is kept in a convenient place—in good order—and in the least possible space.

The neatly arranged stockroom of this concern has a double value—it aids in turning out work quickly and inspires customers.

Berger Steel Bins and Shelving are compact; require minimum floor space; carry heavy loads; are fire retardant and prevent spontaneous combustion; indestructible—cannot warp, split nor rot; flexible in arrangement, and involve no expense through depreciation. Reasonable in cost.

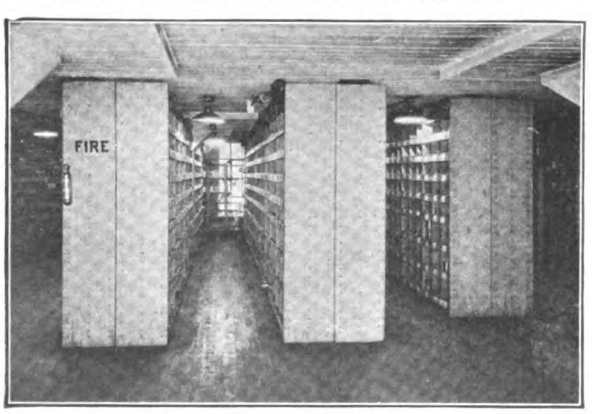
Why not install this equipment in your building?

Write for Catalog R. W.

The Berger Mfg. Co., Canton, O.

Branches: Boston New York Philadelphia Chicago St. Louis Minneapolis San Francisco

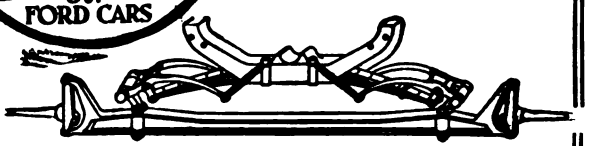
Export Dept.: Berger Bldg., New York City, U. S. A.



Showing part of the Berger Bin and Shelving Equipment installed in Ohio Buick Service Building, Cleveland, Ohio

The Original Double Arm SHOCK ABSORBER W&C For FORD CARS

$10 Per Set of 4



W & C

The Original Double-Arm Shock Absorber Makes As Much Difference As Pneumatic Tires on Fords

Installing a set of W & C double-Arm Shock Absorbers is as good as substituting pneumatics for a set of hard rubber tires. Their resiliency reacts to the immediate advantage of both passengers and mechanism.

They are as desirable on Ford cars as air-filled tires. You *know* how desirable *that* is.

Ask your dealer to-day—and say "W & C."

Some territory still open that needs live dealers. WRITE.

P. H. WEBBER COMPANY

HOOPESTON, ILLINOIS



Built-In Wear



Woodworth Tires wear well. Guaranteed for 5000 miles, they nearly always exceed that distance. And they do it *without puncture or blowout.*

They are not only well made but *protected* tires.

WOODWORTH Trouble-Proof TIRES

Dealers: Do you understand our proposition?

Do you know what we will do for you? Are you there with the facts about Woodworths?

If not, write TODAY!

There's money in it—and big business.

Woodworth Mfg. Corp.

Niagara Falls N. Y.

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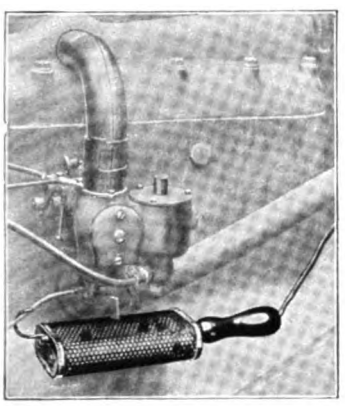
WINTER BUSINESS—Cold Weather Made Profitable

Is the Slogan of the Improved

Presto Electric Heater

The Blue Ribbon Seller That Pays

The PRESTO Electric Heater, *for use under the hood* of motor cars, has a place in every garage wired for electric lights. Keeps cold away from the motor, and insures an easy start after cold nights of standing. Fills a need of every car owner, at a price that makes for sales.

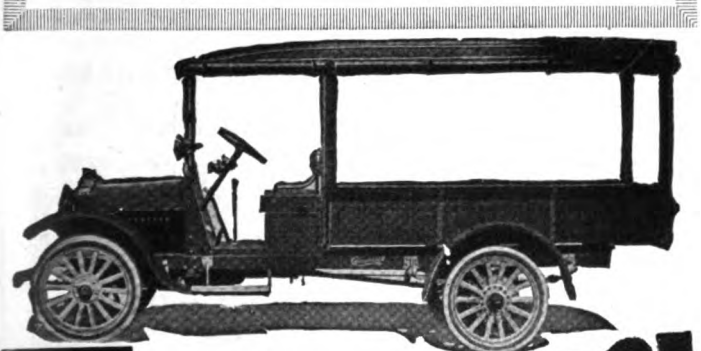


Insures a Warm Carburetor After An Al Night Stand

Goes under the hood where you want the heat. Better than heating the whole garage—and cheaper. Consumes small current. Attaches to the nearest light socket.

New handle and hook make it *more convenient than ever*. Already selling for winter profits, with the rest of the popular PRESTO line. Handled by leading jobbers and dealers everywhere.

Metal Specialties Mfg. Co., Inc.
338-352 N. Kedzie Ave., Chicago
Eastern Branch: 16-24 W. 61st St. New York City
Western Branch: 149 New Montgomery St., San Francisco, Calif.



Commerce

TRUCKS
1 TON CAP

A Year Ahead *of* Other Trucks

The only truck having everything necessary on it—when you buy it

Three types of bodies for all models—Remy Starting and Lighting—Stewart Vacuum System—Pierce Governor—Windshield—Bumper.
Commerce Truck Motor, Detachable Head—Torbensen Rear Axle—Detroit Steel Products Company Springs.

One-Ton Chassis	$1340
With Express Body	1375
With Post Top and Storm Curtains	1450
With Standard Stake Body	1490

The Commerce Motor Car Company
DETROIT MICHIGAN

W. H. Brinkerhoff, Eastern Dist. Mgr.
Belmont Ave., Elmhurst, Long Island, N. Y.

EMPIRE

Comfort and Convenience Economy and Durability Beauty and Quality

The features that dominate the best cars are conspicuous in the Empire.

Fours and Sixes
$1125 to $1345
f.o.b. Indianapolis

The splendid reputation of Empire motor cars, zealously guarded and protected, is your guarantee of satisfaction.

Some splendid territory is open to good dealers. Write for literature and particulars of our liberal sales agreement.

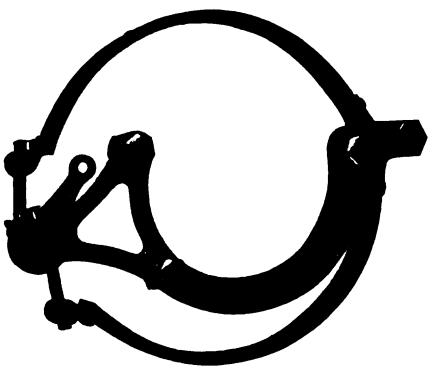
Empire Automobile Co.
Indianapolis, Indiana

Established 1908

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HOLDFORD SAFETY BRAKES FIRST

PRACTICAL



POSITIVE

100% EFFICIENT

HOLDFORD BRAKES

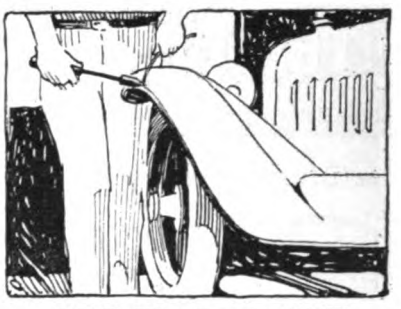
are high-grade external contracting brakes for Ford cars, which can be easily and quickly installed to act from the hand lever as emergency brakes, or from the foot pedal as service brakes. Designed in accordance with the best engineering practice; the band and brace are of steel, the toggle crank and bracket are drop forgings and the lining J-M non-burn. Do not drag when released, no readjustment for wear is necessary and oiling is easy.

The brake usually supplied with this car cannot be depended upon in that "tight corner" or "on the hill." The hand brake wears out quickly and allows the car to creep when being cranked. The constant use of the foot brake quickly wears out the transmission. As the foot brake operates from the drive shaft any accident to the axle or the stripping of gears might mean a serious accident.

HOLDFORD BRAKES

save wear and tear and will be attached by the wise owner on his pleasure car, delivery car or truck. They will positively stop a Ford with locked wheels on *any grade, at any speed, with any load*. Not necessary to remove old brakes. (When ordering state whether hand or foot brakes are wanted.)

The G. H. Dyer Company
Cambridge, Mass.



Kester Crystal-Core Wire Solder

is the most practical solder for automobile repair work. The solder is a hollow wire filled with an acid flux (see cut), which flows as solder is used. Cheaper to use than solid wire or bar solder, as it eliminates preparing, hunting for, or applying the acid-flux.



Cleaner, Neater, Quicker

For spark plug and battery terminals, electric light connections, cracked fenders, gasoline pipe and tank joints, radiator leaks, speedometer flexible shaft, and the general garage uses.

Sold in one pound coils and on one, five and ten pound spools.

Ask your jobber to supply you.

CHICAGO SOLDER CO.
CHICAGO ILLINOIS

FREE TOURING MAPS



CHECK MAPS DESIRED AND MAIL TO
GULF REFINING COMPANY
DEPT. 1070 PITTSBURGH, PA.

☐ Middle West
☐ Transcontinental
☐ New England
☐ New Jersey
☐ Pittsburgh-Buffalo
☐ Southern States
☐ Pennsylvania
☐ Texas

NAME .....
CITY ..... STATE .....

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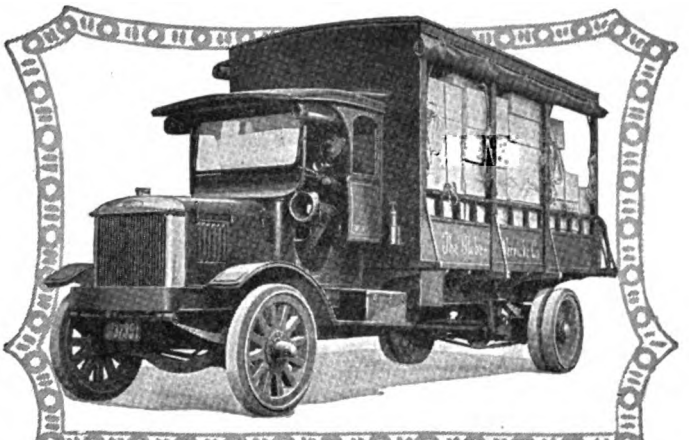
Here's a BIG Profit Maker

This machine will re-bore any cylinder block, one to twelve cylinders, two and one-half to eight inches in diameter, more accurately and quicker than it can be done in any other way. Your present mechanics can operate the

Marvel Re-Boring Machine

It will make BIG profits for you, double your repair business and turn shop losses into a handsome net profit. It is by far the most efficient, rapid, simple and accurate boring machine made. It will pay for itself quick. Write for details today.

THE MARVEL MACHINERY CO.
Minneapolis Minn.



Two-Ton Three-and-a-half-ton Worm Drive

ARMLEDER

Motor Trucks

POWER—Built for heavy hauling, tested on the hills, tried on soft roads, Armleders take their loads anywhere any truck can go.

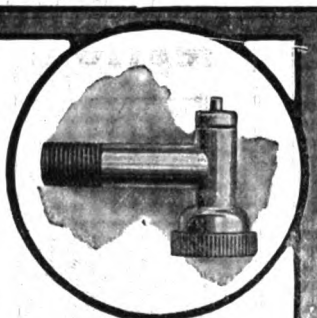
STRENGTH—The strongest materials the market affords—regardless of their costliness, have been liberally applied in Armleder trucks—the parts are oversize.

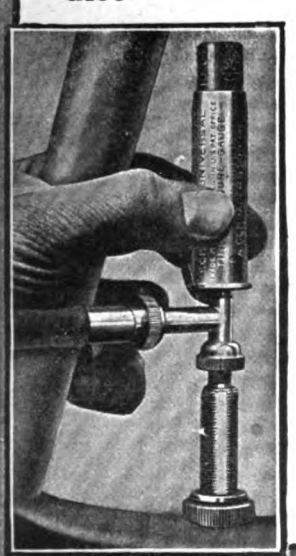
STAMINA—Armleder parts have been combined in a special design which protects them and prevents unnatural wear.

Ask point by point for proof of these statements.

The O. Armleder Company
Twelfth, Plum & Charles Streets
CINCINNATI, O.

You can't tell how much Bengal Tiger there is in a white rabbit until you put him on a meat diet





.....and you can't tell how many miles your tires can give you until you put them on a REGULATED, MEASURED, air diet. Just so many pounds pressure, no more and no less.

If you pumped up your tires every time they fell below the pressure specified by the tiremaker, they would last for the maximum distance. Don't say pumping is too much trouble. With a

SCHRADER UNIVERSAL PUMP CONNECTION

it is no trouble at all.

Ask your dealer to show you how it works.

Price Thirty-five Cents.

A. Schrader's Son, Inc.
783-803 Atlantic Ave.
Brooklyn, N. Y.

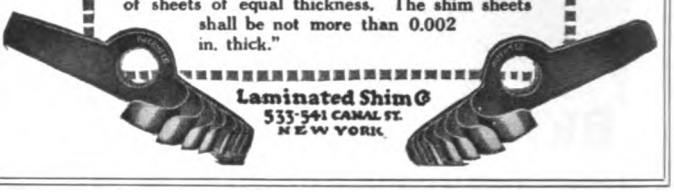
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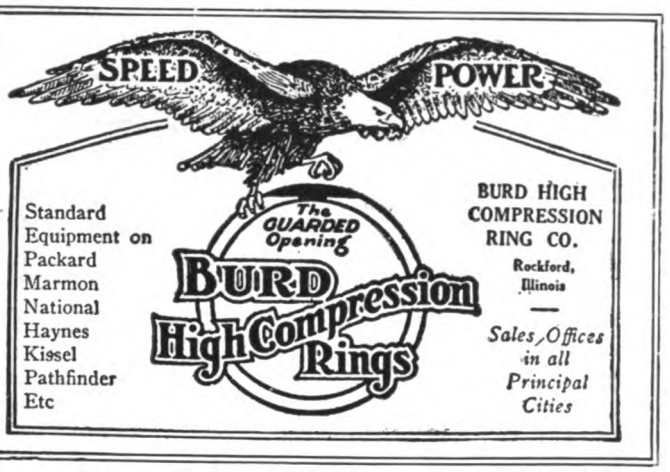
CONAPHORE
LONG HORN
KIMBALL AUTO JACK
G-P MUFFLER CUT-OUT
CASSCO ENGINE-DRIVEN
TIRE PUMP
TENION RINGS

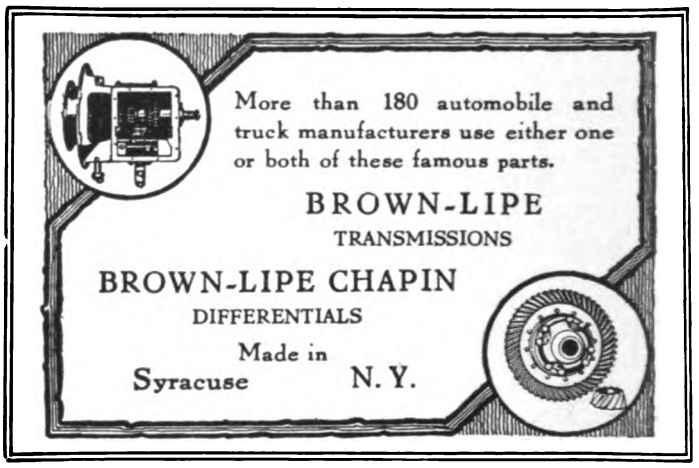
Edward A. Cassidy Co.
A Selling Corporation
Madison Ave. and 40th St., New York City

LAMINUM
The MATERIAL for SHIMS
Extract from Military Truck Specifications

"The main and connecting-rod bearings shall be provided with laminated metallic shims, made up of sheets of equal thickness. The shim sheets shall be not more than 0.002 in. thick."





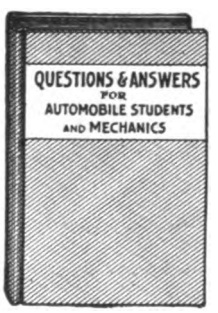


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A Live Salesman

We want to make territorial arrangements with men who call upon the dealer and garage trade to represent the subscription interests of MOTOR WORLD.
Every dealer and garage owner should read MOTOR WORLD regularly. It will help develop their merchandising abilities and serve as a pronounced stimulant to the volume of their turnover. The result will be a twofold advantage for you: First, you will benefit financially as a result of your subscription selling and, second, you will assist in making better merchants of the dealers in your territory so that they will become better customers for you.
It's easy to take subscriptions for MOTOR WORLD from men who are in the trade. If you are interested get in touch with us at once. Address:

MOTOR WORLD
239 W. 39th St. New York City

Questions and Answers
For Automobile Students and Mechanics



By THOMAS H. RUSSELL.

A book of 600 Questions and Answers, adapted for teaching School, the Machineshop or before the Board of Examining Engineers. This is the largest, the latest and most authentic book of its kind upon the market. Prepared especially for Home Study. 150 pages. Bound in flexible Covers—In fact it is a regular text book. Cloth cover, price $1.00. SENT FOR $1.50 PREPAID.

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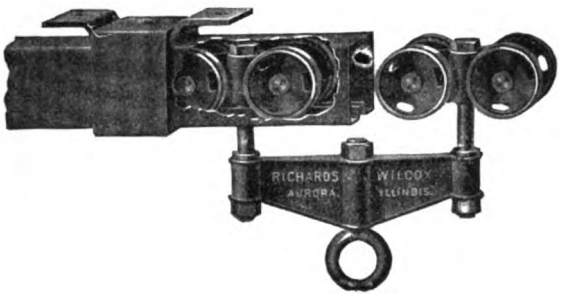
Windshield Cleaner Device Co.

641 East 39th St.
CHICAGO, ILL.

Los Angeles, Cal.
1311 So. Figuaroa St.

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Richards-Wilcox Overhead Carrying Systems Save Time, Labor, Space and Accidents



Facilitate the handling of heavy machinery. Reduce amount of labor required. Provide a safe method for lifting and transporting loads. Make floor space available, which would be otherwise used for trucking.

Convenient, Substantial, Easy to Install

We make R-W Trolley or I-Beam Overhead Carrying Systems suited to loads up to four tons and the particular conditions in your shop. The cost is insignificant compared with the advantages obtained.

Full information furnished without obligation. Write us your requirements, sending rough plan with dimensions and nature of loads to be carried. Interesting booklet entitled "Overhead Carrying Systems" sent to anyone upon request.

Richards-Wilcox Manufacturing Co

SAN FRANCISCO LOS ANGELES NEW YORK CHICAGO PHILADELPHIA MINNEAPOLIS BOSTON ST. LOUIS

AURORA, ILLINOIS, U.S.A.

Richards-Wilcox Canadian Co. Ltd. London, Ont.

"A hanger for any door that slides"

"I didn't know such riding comfort and such driving ease were possible," said a Liberty buyer. The

LIBERTY

is built to satisfy you, with a score of exclusive features for your satisfaction. Let them prove themselves to you—today. $1350.

Liberty Motor Car Co.
Detroit

Give a "Worth While" Look to your place of Business

Black & Decker LECTROFLATER

ELECTRIC AIR COMPRESSOR

Air Service Station De Luxe



The cheapest and best advertisement you can buy.

Inflates 10 tires at a cost of one cent.

A No. 2 Lectroflater, the most efficient and economical electric air pump of its size built, is installed in the upper compartment. This is kept locked.

Will inflate a 33 x 4 tire from flat to full pressure in 90 seconds. Requires no attention. Always on the job. Grease (not oil) lubricated. Scientifically air cooled. No water to freeze in Winter. Pumps only cool, clean, dry air.

A large accurate pressure gauge with illuminated dial is set in the door. This gauge shows pressure in tire before, during and after inflation.

The lower compartment contains a long hose and an electric starting switch.

The top has a 16 inch opalescent globe equipped with a 75-watt nitrogen lamp.

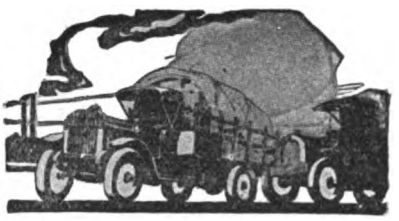
WRITE today for booklet "A Friendly Touch" for full information about the Lectroflater Line of Electric air compressors. Prices range from $50.00 up.

The Black & Decker Mfg. Co.

109 South St., Baltimore, Md., U. S. A.

Distributors in Canada *The Northern Electric Co.*, Montreal

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MANLY TRUCKS—The Biggest Advance in Truck Construction of the Decade, 1½ and 2½-ton Models

DEALERS WRITE

MANLY MOTOR CORPORATION

FACTORY, WAUKEGAN, ILL.

KIMBALL TIRES

Are Doubling Profits for Some Dealers

Write for Our Interesting Offer

These tires are sold without a guarantee. Write and ask us how we do it. They are positively *not* seconds, but first-class fresh casings.

	Non-Skid	Tubes		Non-Skid	Tubes
30x3	$7.55	$1.90	32x4	$14.75	$3.10
30x3½	9.85	2.15	33x4	15.75	3.10
32x3½	11.55	2.35	34x4	16.35	3.20

Prices On Other Sizes In Proportion

Send us your order today, accompanied by cashier's draft on Chicago or New York, or money order. Large and small orders given immediate attention. *Write today for territory.*

Prices will positively be advanced November 1st. Place your order now

Kimball Tire & Rubber Co.

1469 Michigan Ave., Chicago



This "Straight Side" Type is Made Also in Clincher Type

The BEST wrench in the WORLD



"WESTCOTT"

"Westcott" is the original, adjustable "S" wrench—more convenient for motor work than any other wrench.

"Westcott" superiority is shown by its popularity with the best mechanics. It is used in the Ford factories and by many other automobile concerns.

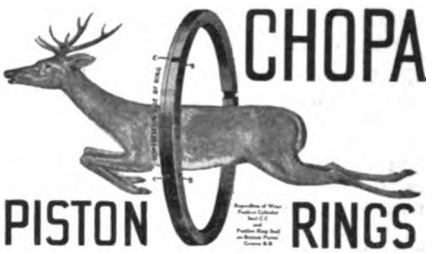
Malleable Iron Handle—Forged Steel Jaw.

Sizes 6 to 14in. (open from ¾ to 2in.) Price per doz., $8.00 to $21.

Get them in your catalog

THE KEYSTONE MANUFACTURING CO.

Buffalo N. Y.



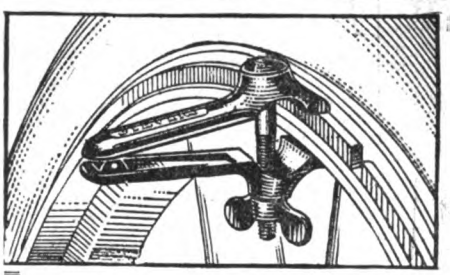
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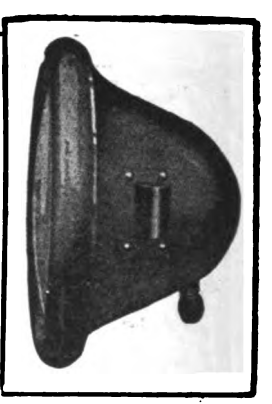
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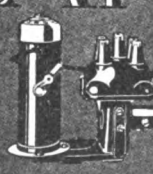
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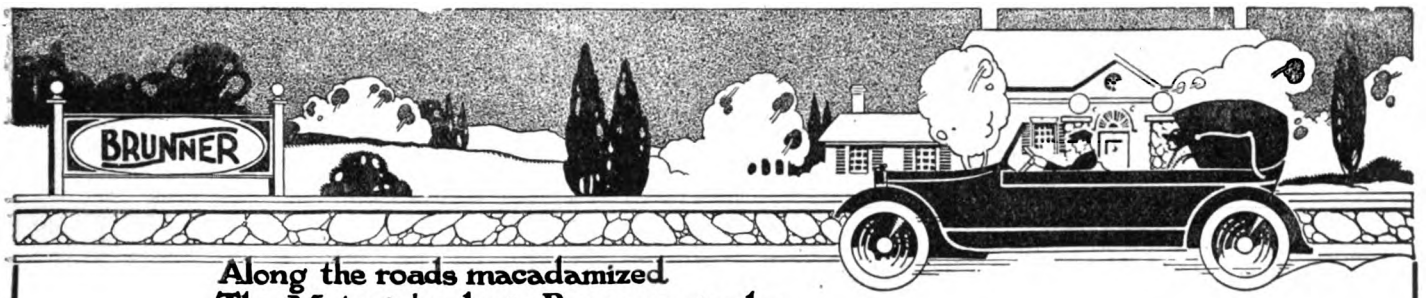
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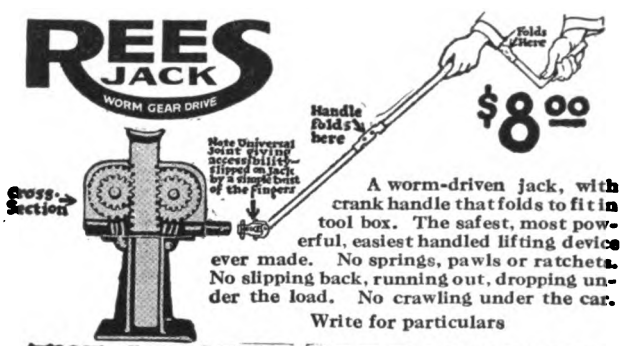
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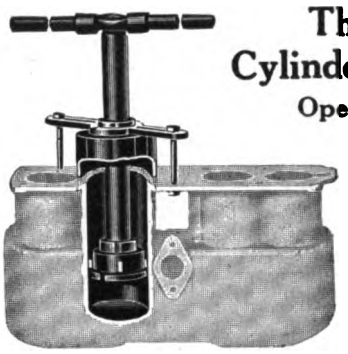
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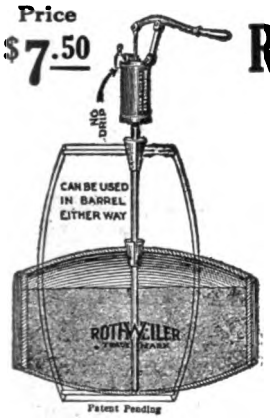
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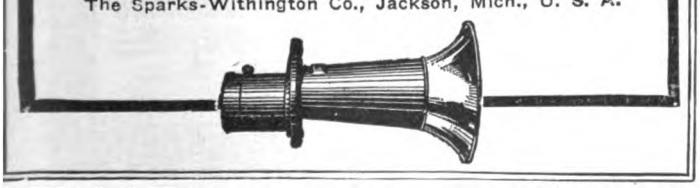
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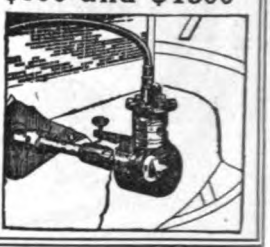
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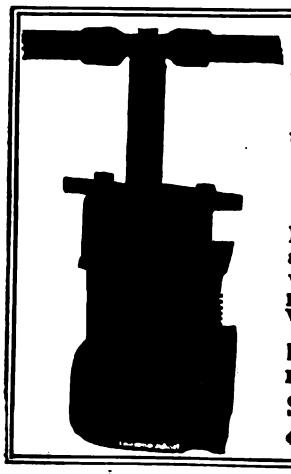
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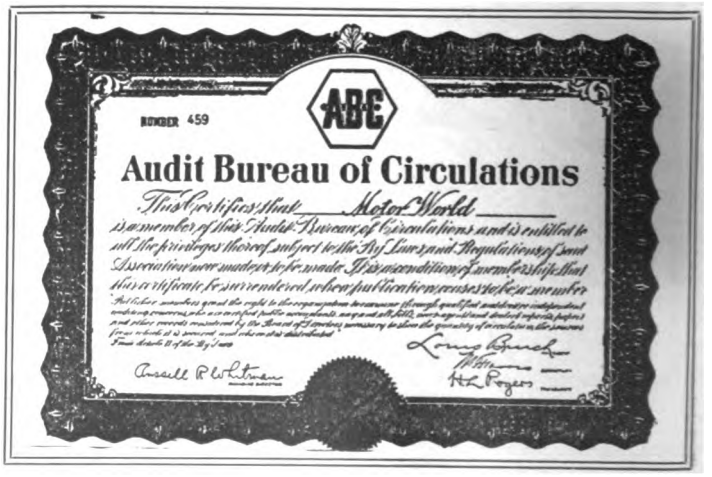
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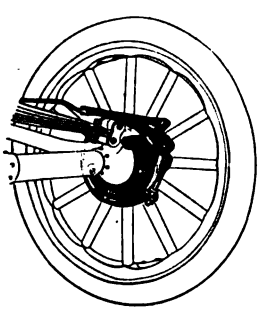
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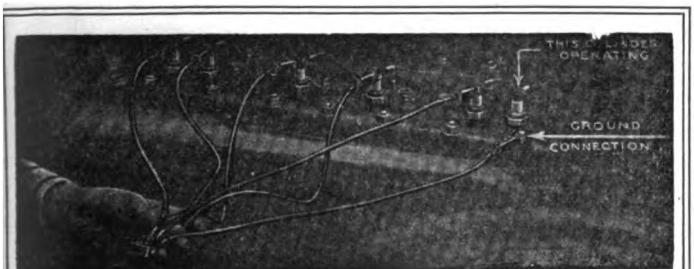
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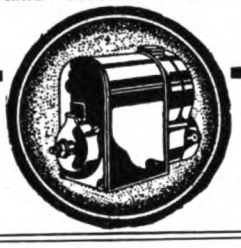
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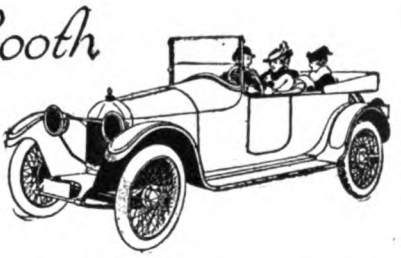
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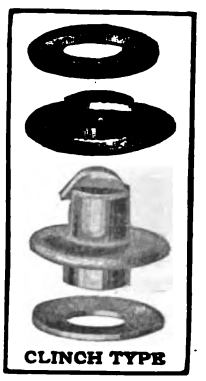
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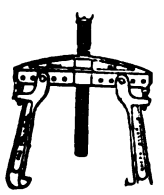
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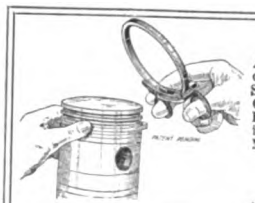


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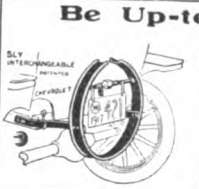
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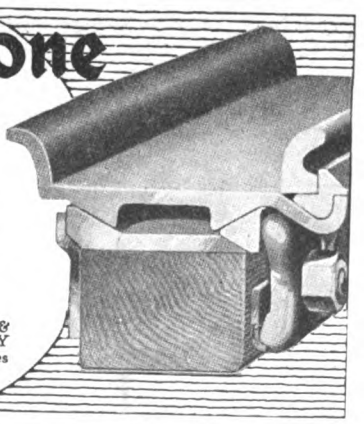
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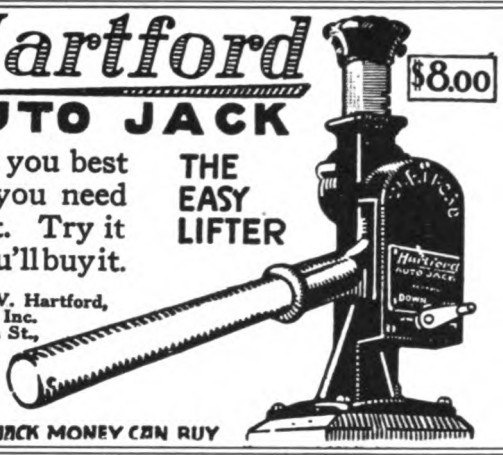
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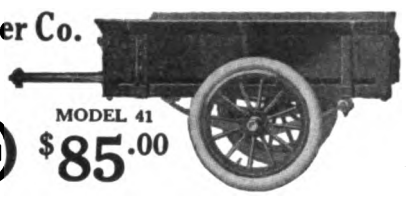
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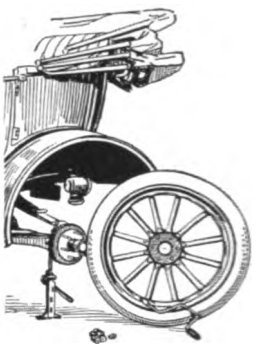
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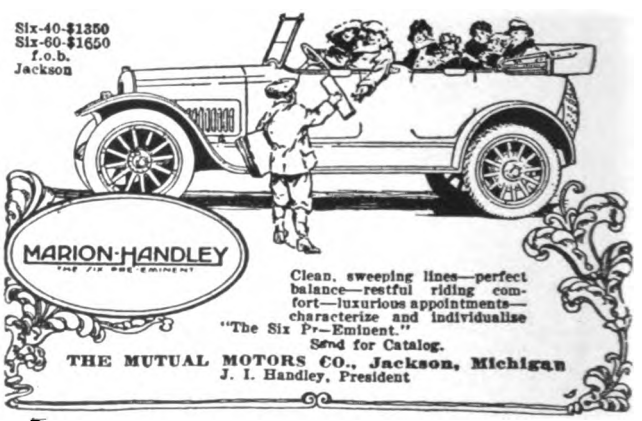
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AUCTION Wednesday, October 24 Thursday, October 25 AUCTION

By order of the United States District Court, for the Northern District of Illinois, we will, commencing Wednesday, October 24th, 1917, and continuing Thursday, October 25th, at 10:30 each day, at 76th and Steward Avenue, Chicago, Illinois, sell at public auction

Entire Plant of The Drexel Motor Car Corporation Bankrupt—Inventory Value Over $400,000

consisting of a fully equipped plant for the manufacturing of automobiles, including over a $200,000 stock of parts and supplies, motors, bodies, including service and good will, etc.
This is positively *one of the finest and most up-to-date automobile plants that has ever been sold at public auction,* all parts being purchased for their 1917 and 1918 cars.

To Correct Error in Our Circular—PLEASE NOTE: Machinery will positively be sold on Wednesday, Oct. 24th, 1917.

Automobiles, Parts and Accessories, Thursday, Oct. 25th, 1917.

Descriptive circular now being issued, and can be had by applying to auctioneers.

HARRY B. STAVER, Trustee.
Ringer Wilhartz & Concannon, Attys. for Trustee.

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37x5 Tires	18.00
All sizes Inner Tubes	3.00
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34 x 3½	6.00	36 x 4½	8.00
31 x 4	5.00	37 x 4½	8.50
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Adjustment made on mileage basis of 30 miles to 60 miles per day, depending on size of tire.

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30x3	7.60	1.90	36x4	17.65	3.35
30x3½	9.85	2.15	34x4½	20.75	4.00
32x3½	11.55	2.25	35x4½	22.75	4.10
31x4	14.35	2.35	36x4½	23.75	4.15
32x4	14.75	3.05	35x5	27.20	4.95
33x4	15.75	3.10	37x5	27.60	5.05

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30x3	7.00	2.00	33x4	14.50	3.50	36x4½	22.00	4.30
30x3½	8.75	2.30	34x4	15.00	3.65	37x4½	22.80	4.60
32x3½	10.50	2.45	35x4	15.85	3.75	35x5	23.10	4.65
34x3½	11.50	2.70	36x4	16.20	3.85	36x5	23.95	4.75
31x4	13.75	3.20	34x4½	20.35	4.15	37x5	24.20	4.95

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30x3½	10.75	32x3½	11.75	34x4	17.50	36x4	19.75
31x3½	10.75	32x4	14.75	35x4½	23.75	36x4½	24.50
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	List Price		Your Wholesale Price	
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30x3½....	18.25	3.75	10.04	2 06
32x3½....	21.40	3.85	11.77	2.12
31x4.....	28.00	4.75	15.40	2.61
32x4.....	28.60	4.85	15.73	2.67
33x4.....	29.85	5.00	16.41	2.75
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30x3½	4.00	36x4	7.00
32x3½	4.50	34x4½	7.50
31x4	5.00	35x4½	7.50
32x4	5.50	36x4½	7.00
34x3½	6.00	37x4½	8.00
33x4	6.00	35x5	8.00
34x4	6.00	36x5	8.00
		37x5	8.00

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1	1	Westg.	AR	New	1750
1	1½	Kimble	Var.Sp.	Used	100-2000
1	2	Westg	AR	Used	1800
1	2	Wagner	BA	Used	1800
1	3	Century	REP	New	1800
1	3	Westg.	AR	Used	1740
1	3	Westg.	AR	Used	1200
1	5	Wagner	BA	Used	1750

MOTORS—2-PHASE, 60-CYCLE, 220-440 VOLTS

1	1	Westg.	CSA	New	1800
2	2	G.E.	K	Used	1200

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6	1	Allis-Ch.	AN	New	1800
1	1	G.E.	K	Used	600-1800
3	2	Westg.	CSA	New	1800
1	2	Westg.	CS	New	900
4	3	Westg.	CS	New	1800
1	3	Westg.	CS	New	900
6	3	Allis-Ch.	AN	New	1800
4	5	Westg.	CS	New	1200
2	5	Howell	SC	New	1200
2	7½	Westg.	CS	New	1800
3	7½	W.E.	KT	New	1200
5	7½	Westg.	CS	New	1800
2	10	Howell	SC	New	1200
1	10	Allis-Ch.	AN	New	720
1	15	Allis-Ch.	AN	New	600
1	15	G.E.	K	Used	1800
2	15	Allis-Ch.	ANY	New	900
1	20	Westg.	CS	New	1200
2	20	W.E.	KT	New	900
3	20	W.E.	KT	New	1200

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1	2	Richmond	SH	Used	1600
1	3½	G.E.	CE	Used	800
1	5	G.E.	SH	Used	1650
1	7½	Richmond	RE	Used	1500
1	7½	Eddy	SH	Used	1000
1	10	Westg.	M	Used	1250
1	12	Weston	Elev.	Used	700
1	15	C.W.	CM	Used	800
1	15	C.W.	SH	Used	725
1	20	Ft. Wayne	B	Used	820
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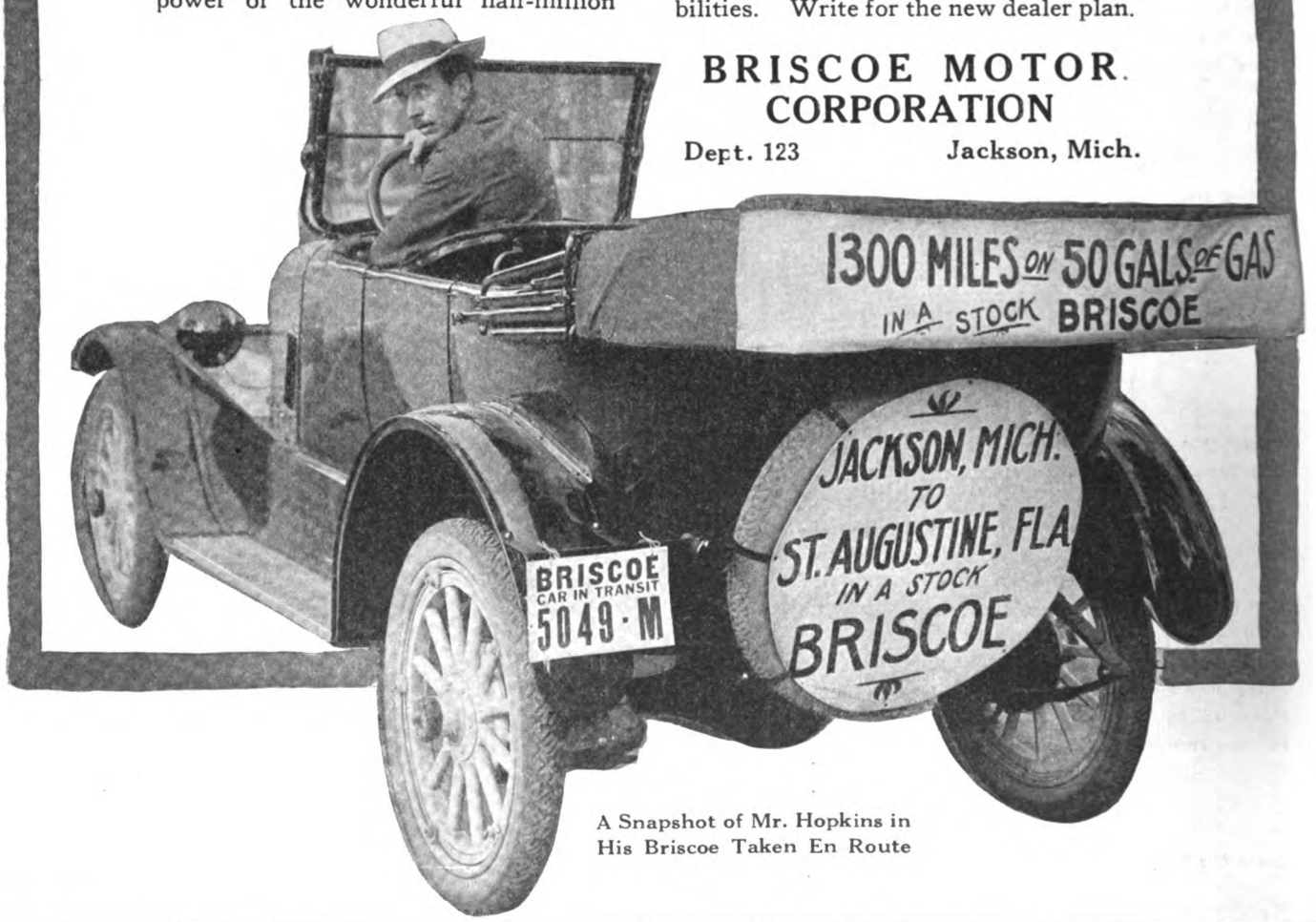
Briscoe beauty, the smooth flowing power of the wonderful half-million dollar motor, wide choice of Briscoe body design, and the many Briscoe extras—plus Briscoe proved economy—are the most wanted motor car features. * * * *

And these are reasons why Briscoe dealers are making money.

The Briscoe holds great profit possibilities. Write for the new dealer plan.

BRISCOE MOTOR CORPORATION

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A Snapshot of Mr. Hopkins in His Briscoe Taken En Route

BRISCOE $725

THE CAR WITH THE HALF-MILLION DOLLAR MOTOR

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FOR EFFICIENCY and EVENTUAL ECONOMY

Thoroughly Dependable and Guaranteed Absolutely

MOSSBERG SOCKET WRENCH SET No. 14

For making repairs and adjustments in the best, quickest, and easiest manner. A glance at the contents explains why this most complete set "speaks for itself." The set contains Reversible Ratchet Wrench, Offset Handle, Takedown Handle and Extension Bar, Pipe Wrench, Pliers, Five D. E. Wrenches, with milled openings 1/4" to 1", Cotter Pin Puller, Universal Joint, Screw Driver Bits, Three Special Spark Plug Sockets and Thirty-four Guaranteed ◈ Pressed Steel, Square and Hexagon Sockets, graduated by 32nds, from 5/16" to 1 9/32". No. 14 Set.

Price $12.00



DEALERS' DISPLAYS—Just the wrenches that sell—Just the way to sell them.



"R" Board for FORDS

Ten different Ford Necessities of Mossberg manufacture that the Ford owner just naturally must have. Consists of 27 Tools that list for **$10.00**

Mossberg's "T" Board

An attractive article in itself, it displays 23 unbeatable ◈ adjustable wrenches. A good profit is made, as they list for **$10.00**



"T" Display Board

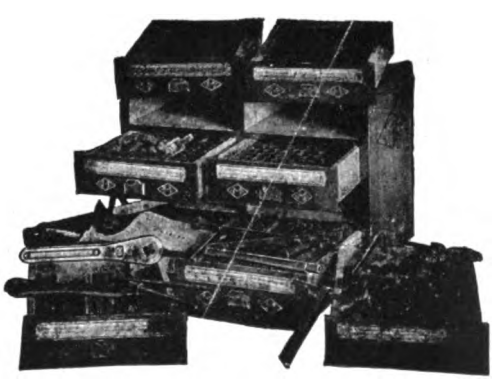


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Contains 300 Regular ◈ Guaranteed Pressed Steel Sockets, Assorted, besides Reversible, Offset, and Takedown Handles, Extension Tubes, Universal Joints, etc. A dandy finished fixture for supplying a positive demand.



No. 300 Socket Chest

You know the firm. Get acquainted with its products. See Catalog 191-1

FRANK MOSSBERG CO., ATTLEBORO, MASS. U. S. A.

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MOTOR TRUCKS

With a rapidly increasing demand for motor trucks, and a decreased supply due to large government requirements and difficulty of obtaining materials, deliveries are bound to be slower.

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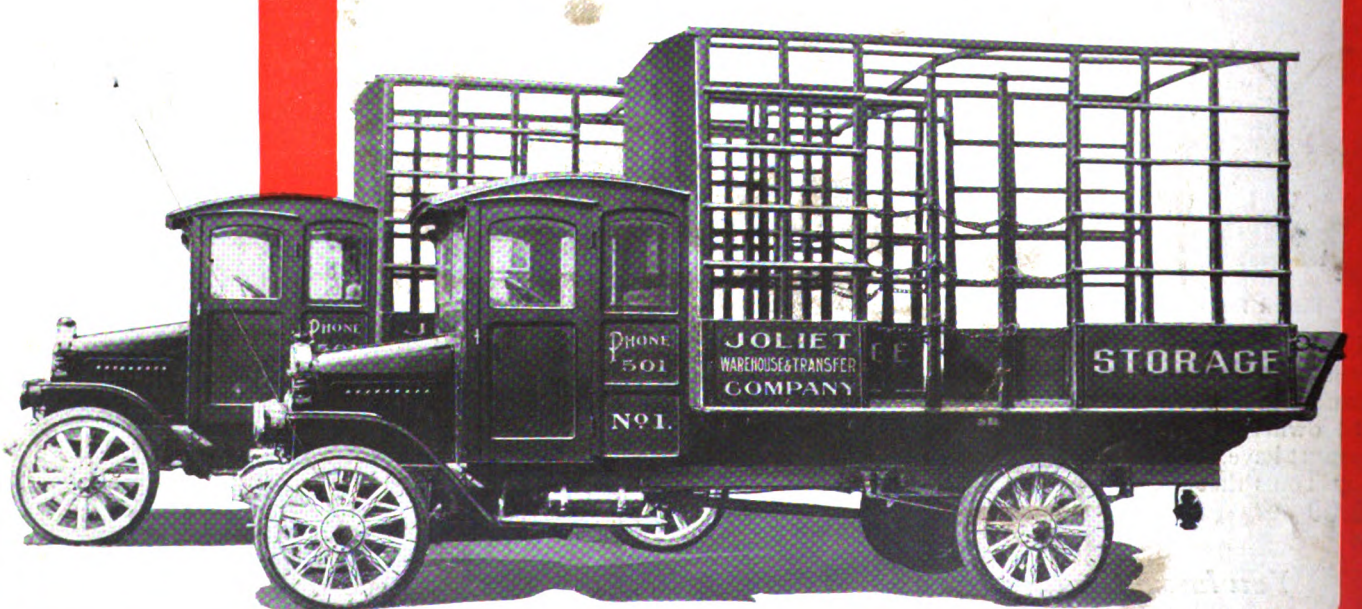
A Denby dealership affords you this chance. It offers a truck with an established demand, real co-operation in sales work and a production insured against shortages due to lack of materials.

Let us go over the whole matter with you.

Capacities, 1 Ton to 3 Tons.

DENBY MOTOR TRUCK COMPANY

Dept. F Detroit, Michigan



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MAKING YOUR WIFE A BETTER PARTNER—*In this Issue*

MOTOR WORLD

for

DEALERS, JOBBERS AND GARAGEMEN

Volume LIII
No. 4

[New York, October 24, 1917

Ten cents a co
Two dollars a ye

BUY A LIBERTY BOND



To-Day is Liberty Bond Day. Let's make it a record-breaker. After buying your bond get busy with your friends.

U. S. BALL BEARING MFG. CO.

CHICAGO, U. S. A.

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The Van Sicklen Company, Elgin, Ill.
Factory—Elgin National Watch Company

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KING MOTOR CAR COMPANY, DETROIT

"The Car of No Regrets"

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There's a Right Lubricant

This Story Tells You

1—What it is. 2—Why you should sell it.

You wouldn't put cylinder oil in a Howard watch, would you?
You wouldn't put axle grease in a gearset, would you?
You wouldn't put lard in a motor, would you?
Indeed you wouldn't. They are all right in their places, but they cause damage if wrongly used.
It's the same way with lubricants. Axle grease does all right for a wagon, but when heat and high speed are developed, as in an automobile, the highest grade of lubricant must be used.
OILZUM will stand any test you can give it. It is made from a special formula, tried out under racing conditions, and it "does its bit" every time. Because it stands every test it always satisfied car owners, and because it satisfies them they come back for more.

That's why OILZUM makes money for dealers. You may not make as much per can as you could on a cheap oil, but the constantly increasing come-back of customers swells your profits and assures you a fixed future income.

Now—in every plan for success one must (1) investigate, (2) plan and (3) work the plan. And you should at least investigate everything that looks like an opportunity.

We believe OILZUM is an opportunity for YOU and suggest that you mail to us the Investigation Coupon in the corner of this page.

Oilzum MOTOR OIL LUBRICANTS

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MOTOR WORLD
for
DEALERS, JOBBERS AND GARAGEMEN

PUBLISHED EVERY WEDNESDAY BY

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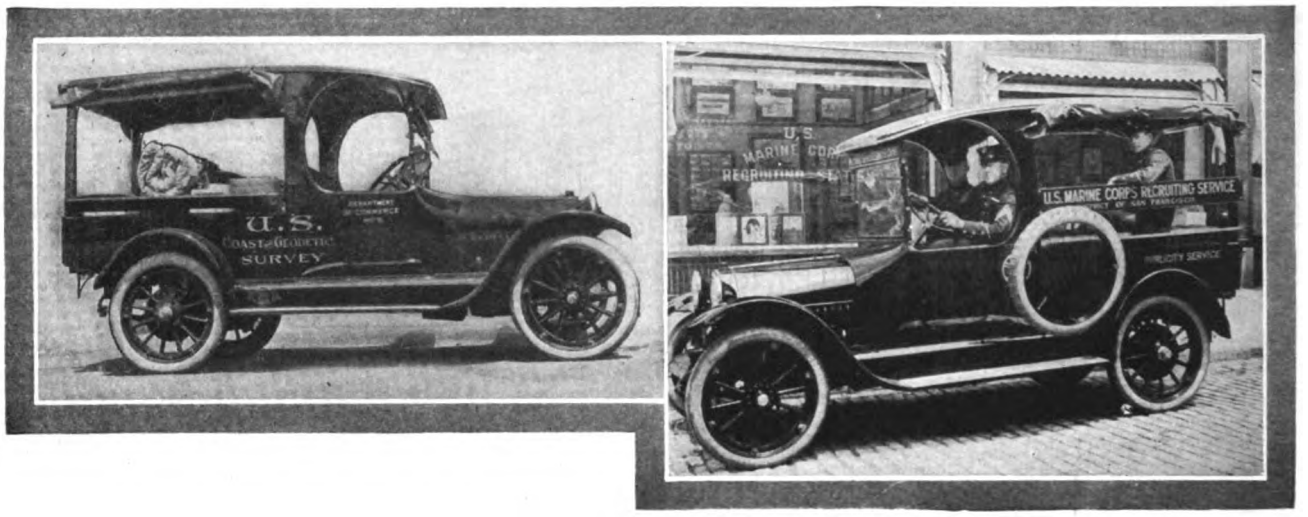
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STUDEBAKER makes six quick selling types of ready-to-use commercial cars, adapted to fifty-one different businesses.

That alone gives Studebaker dealers a remarkably wide selling field, but the profit opportunities do not stop there. Studebaker also builds special chasses for special body jobs, such as Ambulances, Hearses, Fire Trucks, and other special uses.

There is a big, profitable opportunity for the sale of such equipment in your town. Write today for detailed information.

Studebaker

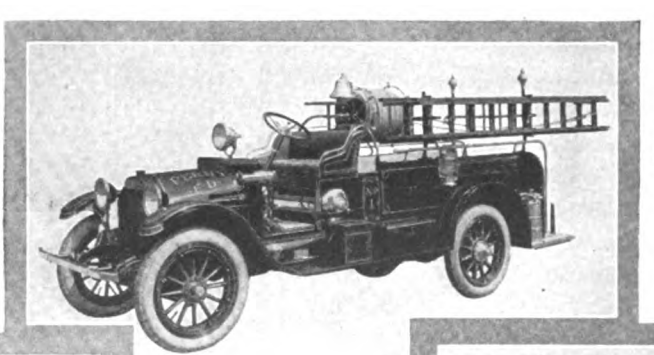
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Panel Delivery	$985
Station Wagon	$985

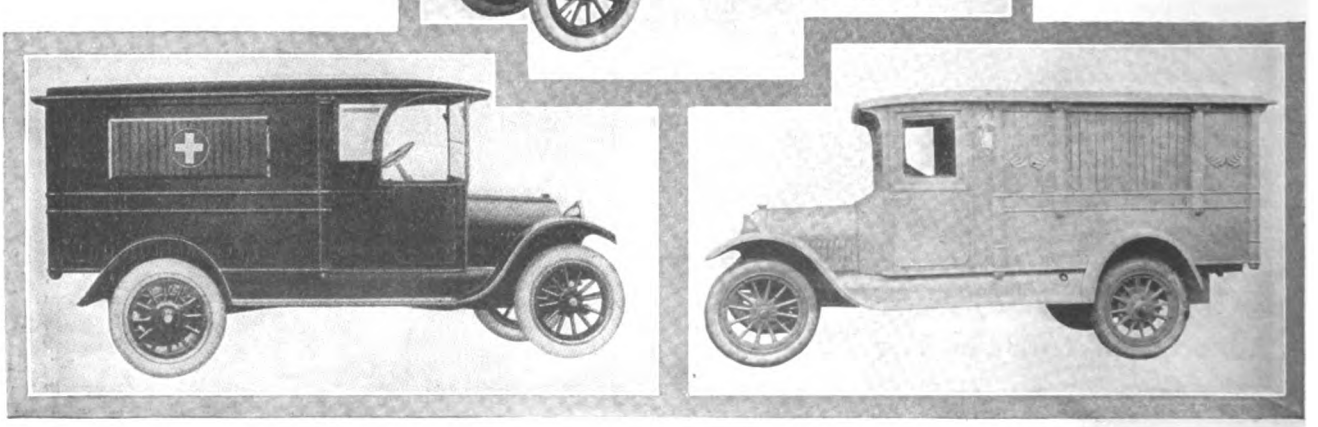
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ONE-TON MODELS

Open Express	$1400
Stake Model	$1450
16-Passenger Bus	$1600

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MOTOR WORLD
for
DEALERS, JOBBERS AND GARAGEMEN

Vol. LIII New York, U. S. A., Wednesday, October 24, 1917 No. 4

Motor World's

Big Motor Truck Number

NEXT WEEK

THE motor truck is going to play a bigger part in the business of the dealer than it ever has before.

The truck business is going to boom.

There is now—and is going to be—a big demand for trucks. Makers are going to manufacture trucks in quantity. Some one must SELL these trucks.

In some cases trucks will be sold by new dealers, men who set up as truck dealers. In many many cases they will be sold by the men who are now engaged in selling cars, who have businesses already established.

There are certain things you should know about the truck trade. You should post yourself NOW in order that you may be equipped with the knowledge necessary to let you get into the business right and make money from the start. You should know

1—How truck dealers operate.

2—What business changes you must make.

3—What the usual truck-buying field is.

4—Who the truck makers are.

5—The specifications of all the trucks made.

All these things you will find in the annual Motor Truck Number of MOTOR WORLD which appears next week. This number will be valuable as a reference book. It will rank with your dictionary, your catalog and your reference files. You should watch for this number and when you get it SAVE IT.

Never before in the history of the motor industry has the truck occupied the position it has to-day. The whole trade is on the threshold of a big and important era. Every dealer is going to be affected. The changing movement in truck affairs concerns YOU. This big number is all important.

Watch for it!

Read it!

Study it!

Save it!

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"Can any New Principles of Salesmanship be added to those we already know?" some one asks. "Yes," we answer, and here they are:

Making The Wife A Better Partner of The Man

These Principles Apply to Your Wife and Mine

A REVOLUTIONARY step in salesmanship and business has been taken by the National Cash Register Co., Dayton, Ohio. Last week it held at its factory a convention of the 400 wives of its salesmen and sales managers.

The men were not there. They stayed at home and worked as usual. In fact, some of them worked more than "usual" and kept sending to the convention orders as a compliment to their wives.

The convention was for the purpose of making the wife a better partner of the man. The company, in a search for greater efficiency, reached over the shoulders of its men and into their homes in an effort to make the wife a better helper, inspirer and co-operator in the fight for business.

What is the result hoped for? It is this:

That the salesman's mind may be happy and free from petty home worries.

That the wife may be a real business help.

That he may make more money for himself and his family.

That the company may get more business.

That the good-will and prestige of the company may be immeasurably increased.

Don't Merely Read This Story—Study It

Did you ever go to work in the morning with a somewhat grouchy mind because some little thing had gone wrong at home?

Did your wife ever ask you to do things that interfered with your business?

Did you ever wonder why your wife didn't take more of an interest in your business?

Will these results be accomplished? Was the convention worth while?

It is not likely that a full hundred per cent of possible results will be obtained—at least not right away. But it is certain that big results will ensue almost immediately, and it won't take much extra business to enable the National Cash to regain the something like $50,000 that it spent on the convention.

If twenty good salesmen get some inspiration out of the affair and if their wives swing into the spirit of the movement it ought to result in the sale of ten extra of the better grade of cash registers, and this will mean business amounting to nearly $200,000. It isn't going to be a hard job for the company to break more than even. And beyond that it is has wonderful hopes.

The idea was conceived by President John H. Patterson last spring and when it was sprung on the sales organization it was the subject of much comment. But the whole organization is accustomed to radical moves and readily assented.

The company wrote a rather lengthy letter of invitation to each wife, inviting her to the convention, asking her to bring no friends, relatives or children, advising her how to make out her expense account

Ten Things an N.C.R. Woman Can Do

1—*Serve simple food.*

2—*Keep him cheerful.*

3—*Give him plenty of fresh air.*

4—*See that he gets plenty of sleep.*

5—*Lend encouragement at the right time.*

6—*Encourage him to take regular exercise.*

7—*Be economical, and save for a rainy day.*

8—*Take a new interest in his sales record.*

9—*Study merchants' needs and help husband with tips.*

10—*Read N. C. R. advertising, and call his attention to important things.*

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" . . . but don't forget . . . the man who built the ship. He's the man behind the man behind the gun."—DOUGLAS MALLOCH.

for the trip and indicating the nature of the meeting.

Sunday of convention week the women began to arrive. Some of them, especially those from far points, already had secured an insight into the sort of lives their husbands lead. They had bumped the bumps in sleepers, they had lived in the meager space a Pullman affords, they had awakened in the morning with travel tired heads and unrestful feelings. And then, instead of going home, they wound up in a hotel—which is NEVER home no matter how homelike it may be. And there are mighty few that are very homelike.

Their Sunday was anything but a natural Sunday. It was just a traveling man's day off—and it could hardly be called a day of rest, even though they did nothing but try to rest.

For the rest of the week they lived in hotels and clubs, attended meetings at the factory, just the same as their husbands often do, saw portrayed in a theatrical way some of the things their husbands have to put up with and were graphically shown what home co-operation means to the man in dollars and cents.

When the convention ended there were some radically changed points of view. One woman, who had always thought her husband unreasonable and selfish because of the time he spent in traveling, changed her mind considerably on the subject. She now sees that he is merely trying to be a par-plus man at his work.

Impressing upon the minds of the wives the points the company wished to make was a diplomatic job. Were the convention one of salesmen the company could have gone at it in the standard educational way, told what was wrong, how to make it right and pounded hard on the necessity for action.

But this could not be done. The wives are not employees of the company, are not used to being taken in hand and educated and probably wouldn't have stood for any drastic educational measures. Therefore, the whole program was one of suggestion all the way through. Not once did any factory man tell the women they ought to do this or that—but the suggestions had fully as good an effect.

For instance: Upon the wall of the meeting room —the N. C. R. Schoolhouse, which is a 1200-seat theater—was a big 15x20 sign. What it said is shown on the opposite page.

This sign hung there throughout the convention. Everybody read it. But not once did an N.C.R. speaker draw attention to it. It was merely suggestion. It stared the women in the face for five days. Some of them undoubtedly expected the 10 points

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would be made the subject of a sermon. But they were not. They simply hung there and the suggestions sunk in.

Beside this sign was another about twice as big, showing a bag of money with gold coins trickling out through holes. This was labeled "Leaks in His Earnings." The leaks were labeled:

1—Spends too much time at home.
2—Eats too much; loses energy.
3—Does not use simple methods.
4—Lacks ambition; self-satisfied.
5—Does not cover his territory.
6—Fails to study—lacks interest in business.
7—Does not read and use company's advertising.

"You can help him stop these leaks," said a line below the picture. And all through the convention nothing was said about the big cartoon.

The convention opened every morning with songs illustrated with rapidly changing stereopticon slides.

After the welcoming addresses the first morning the women were shown a picture history of the National Cash Register Co., the development of its product, the upbuilding of its section of the city and the betterment of its employees through welfare work.

This made a wonderful impression. It showed the women what a big upstanding institution the National Cash is. It showed them the type of organization with which their husbands are connected.

Monday afternoon the women were taken through the factory in squads. To many of them the whirring wheels and screaming lathes meant nothing, but it showed them that there is a mighty big organization back of every cash register. Tuesday afternoon there was more of the same thing. It all contributed to the desired impression.

Also, there was shown the movie used in selling cash registers, entitled: "Troubles of a merchant and how to overcome them." There was also a theatrical pageant of nearly 100 N.C.R. employees, each of whom carried a big card concerning some sales point. It was impressive.

Interspersed in the program were talks by nationally known speakers, who talked on such subjects as Dress, Home Efficiency, Personal Efficiency, The Use of Advertising, How the Salesman Can Sell More Goods, etc. Aside from getting ideas for their own use the women were permitted to see ideas that their husbands could use, and the assumption was that they would urge their husbands to use these ideas. If the wife operates in this way she becomes a sort of N.C.R. assistant sales manager, operating always at the side of the man—and for her own benefit.

The climax came Thursday afternoon. On the stage was shown a play in which the principals were a salesman and his wife. There were jars in their home life. The result was that there were jars in the office life, and lost business was inevitable.

The second act showed the same home and office after the wife had attended the N.C.R. women's convention. She was sold on the idea of co-operation, home life had been revised, the little jars had been removed, the wife was taking an interest in the business, she was tipping her husband off to business leads, the husband was more energetic, his mind was peaceful, his office was doing better work and everybody was making more money.

To say that this little play made an impression is putting it mildly. It was a fitting climax. It must have opened the eyes of many women.

And the N.C.R. doesn't propose to let the movement drop here. It is going to issue literature for the wives, following up the idea. It is going to have considerable of the husband's mail sent to the house so the wife can keep in touch with the company's sales ideas. There is going to be a consistent and forceful development of the plan so that the idea may grow instead of lapsing.

From all this it must not be understood that the N.C.R. women are ALL in need of this work. In the convention were a number of women who have developed their ability to the point where they can sell registers as well as their husbands. Several of these women told how they co-operate with their husbands and the results that are secured, all of which contributed to the impression desired.

How the Dealer May Use the Idea

ALWAYS in business the home life of the men is a big factor in his success. An employer may get a certain efficiency from the employee, but this efficiency is greater if the home life is made ultra satisfactory.

Reaching beyond the man and into his home is a ticklish proposition. Unless diplomatically done the employee may take offense. Even if he be sold on the idea there is still his wife who may take offense.

MOTOR WORLD makes this suggestion: Ask your men to read this story of the N.C.R. convention.

If they are for it consider the plan for two or three weeks before you put it into effect. Give the men a chance to talk it over at home.

If the idea takes, plan your work. Form a club of the wives. Get speakers in to talk on home efficiency subjects and other interesting and timely topics. Talk to them once in a while yourself, throwing out suggestions and also explaining the kind of work the men have to do and how necessary it is once in a while that they be late for supper.

Maybe your own wife can talk to the club at times. And if you find a wife who is a bang-up co-operator let her talk once in a while. Get them all into the spirit of the thing. Don't make it just a better-wife club, for that would be undiplomatic. Introduce other subjects to make it worth while and interesting and let the better-wife idea be put across by suggestion and indirect work.

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The Ways of Commerce Are the Ways of War

How the "Trading with the Enemy Act" Affects Business To-Day

By Hon. William C. Redfield

Secretary of Commerce

"THE restrictions of the 'Trading With the Enemy Act' would obtain whether the act were passed or not," said Secretary of Commerce William C. Redfield in explaining the purport of the measure to a gathering of business paper editors in New York last week. And after he had finished explaining the measure, those who heard him came to know that there really is little in the measure that is new. It is largely an explanation, a clarifying of existing laws, to which is added the principle of permitting a series of licenses which make possible the things which the bill itself prohibits.

"The ways of commerce are commonly the ways of peace," he said. "But the ways of commerce now are the ways of war, for this war differs from all other wars in one great particular. It is not the army alone that fights, but such is the altered character of modern war that the whole nation must be one fighting unit, all of us, from the smallest to the greatest, from the youngest to the oldest. The boys in France are merely the spearhead of the United States; that power that actuates the spearhead comes from here. If we weaken here, they fail yonder.

"Now, it is because the nation in all its forms and capacities is in this war as one great unit that commerce has turned from her peaceful pursuits and itself becomes a war weapon.

"Commerce is used as a war weapon in two ways. First, it is used to provide the nations associated with us in the war with the means of warfare; and, second, it is used to see that our enemies do not by direction or indirection obtain anything that comes from our shores which we can prevent. There is a third element in it, the element of conservation, which has to do not with economy of money, as I think is too often thought, but with the saving of that of which we have but little to the use that must be made of it in the war and the using, on the other hand, of that of which we have abundance in its place.

"We are not certain yet that we are going to have, even with all our power, enough, first, for ourselves; second, for our associates; and, third, anything for the neutrals to whom it seems to be safe to sell any goods in these days. That question has got to be determined yet.

"One thing we are mighty certain of, the margin is at least so near that it doesn't seem wise to sell anything except to carefully safeguarded neutrals, and we must be sure that no American boys are killed for lack of what our industries can do, and that our Allies do not suffer for lack of what they do.

"And consequently the principle which lies behind the restriction of exports is the principle of conservation; that our industry shall be so controlled as regards their exports that after our own needs are satisfied, what we sell shall be used to support our associates, and what we have left over shall go as freely as we may to places where it is safe to have it go and to persons who use it wisely.

"That is the simple principle that lies behind the whole question of the restriction of exports.

"The restriction of imports is not our own; it is imposed upon us, but we are the beneficiaries. At the bottom of it lies the same reasoning precisely.

"So one of the phases of the 'Trading With the Enemy Act' is the control by the President of imports. It had to be general in order to be specific. It is not meant to be, it is not at all likely to be exercised in a general way; it means simply that a body—in this case the War Trades Board—shall be authorized to issue licenses to import prohibited products, and shall import them under such restrictions as that they shall be free for our use, but not free for misuse in the sense of being sold to the enemies of the common cause.

"*The restriction of the act will exist whether there is any act or not.* It is and has long been the law of nations that in time of war all communication with the enemy of all kinds is prohibited. It didn't need this act to make it an impropriety, an act of wrong, to sell goods to the German in Germany, or to ship goods to South America, knowing that by that means they would reach Germany, or reach anybody so as to aid Germany—that is just as strongly forbidden if this act were repealed to-morrow. *The prohibitions of the act are not new;* they are simply, clearly stated and made plain by the language of the law—but they existed before.

"The law, then, provides a clarification of these facts making it perfectly plain what trading is, defining it, defining very clearly with whom trading is forbidden; that is to say, defining enemy and defining ally of enemy; but it does not make a new law when it does that; it merely states what was the law before.

"Then it proceeds to provide a system of licenses whereby anything which is unlawful in the act or without it, of that

(*Continued on page* 11)

"GENIUS is an infinite capacity for taking pains." And it means taking pains in the understanding of things as well as in the accomplishment of material things.

How many of us, for example, know how closely the "Trading With the Enemy Act" concerns us and our interests? Yet here is one of the things that any man who aspires to be a business genius must take pains to understand.

No better man could have been chosen to explain the act in an understandable way than Secretary of Commerce William C. Redfield. Himself a successful business man, he has risen to his present position of authority and responsibility through an infinite capacity for taking pains. His explanation of the "Trading With the Enemy Act" is worth reading.—Editor.

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Put System Into Your Sales Work With

A Prospect Card

Gives a complete record of the prospect—easy to install and operated by a girl

You Should Use It Because

¶ It is the First Step in Systematizing Your Selling.

¶ It Enables You to Start Right in Where You Left Off Last Time.

¶ It Enables You to Avoid Needless Repetition of Selling Talk.

¶ It Shows at a Glance the Results of Calls Already Made.

¶ It Shows the Letters and Literature Sent.

¶ It Gives All Essential Personal Information Regarding Prospect.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31

Name _____ Business _____

Res. Address _____ Bus. Address _____

Res. Phone _____ Bus. Phone _____

Origin of Prospect _____ Worth _____

Model Wanted _____ Car Owned _____ Asked $ _____ Offered $ _____

Remarks _____

Date	Salesman	Remarks	Date	Letters

Car purchased and why _____

WHAT IT IS

THE card is designed to be complete and compact. It gives the necessary data regarding the prospect and the work done toward making the sale, yet it is small enough, 4 x 6 in., to be carried conveniently in the pocket. The upper part gives his name, business, home and business addresses and phone numbers, how he was obtained as a prospect, an estimate of his wealth, the model he is interested in, and the car he now owns, together with the price he asks, and the offer that has been made for it.

The remainder of the card, including the other side, records the efforts made to sell him. To the left of the double line is told the date, the name of the salesman and his report on each interview. To the right of the double line the letters sent and the dates on which they were mailed are put down.

If he purchases another car this is stated at the bottom of the card.

The numbers, from 1 to 31, at the top, indicate when the next call is to be made. An indicator may be slipped over the top edge at the proper point, say the 20th, so that in looking over the file the salesman may readily pick out all the cards with indicators on this figure.

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How to Use the Card

THE prospect cards should be carried in a file drawer on or in the salesman's desk, and the sales manager should have a duplicate set of cards on file in his office. The easiest method of making the entries, since there are two sets of cards carrying duplicate information, is to entrust the work to a stenographer. Although the card stock is substantial, a carbon may be readily made on the typewriter.

At the end of the day the salesman makes a report of what he has done, either on a special form devised for this purpose or by dictating a memorandum. In either case the data on the report should be sufficient for making out new cards or additional entries on cards already in the files.

A record of all mail sent to prospects, whether individual letters dictated by the salesman or the sales manager, form letters or printed matter, should be made automatically by the stenographer on both sets of cards.

By delegating the work of caring for the cards to the stenographer the up-to-dateness and accuracy of system is assured and the time of the salesman is conserved. She can look up telephone numbers and addresses and any other details not given in the daily report.

The salesman, however, should personally attach the indicators which show when the next call is to be made. This work might be left to the girl, but inasmuch as the time for the next call may be indefinite it is better for the salesman to use his judgment as to when it should be made.

When the salesman starts out to make some calls he should go to his file and pick out all cards which the indicators show are for that day and the cards for the next two or three days should be inspected to make sure that there are not some which might just as well be followed up then.

The salesman takes the cards with him so that he may have complete information regarding each person. If he uses a car it may be desirable to carry the file in it, inasmuch as there are times when some other card is wanted unexpectedly.

This simple system enables the salesman to have a brief but complete record of each prospect, yet it requires no extra work on his part. Whether the system is used or not, he must make a daily report of what he has done, and the work of making out the cards is entirely in the hands of the girl, so that he has everything to gain and nothing to lose by its use.

There should be no question as to the necessity of having two sets of cards. First, because there is always the possibility of the salesman losing some of his cards; second, because it enables the salesmanager to ascertain the progress that has been made, in a given instance, toward making a sale. If the record is unsatisfactory he has all the data he needs to determine what should be done to help the sale along. If he should decide to turn the name over to another salesman it is not necessary to make out another card since there is provision for showing what salesman conducted each interview.

Third, in case a prospect comes in to see a certain salesman who is out, some other salesman, by referring to the master file, can quickly determine how far the deal has progressed and can take it up from that point. Of course, he might get this information from the other man's file, but there is always the chance that the latter has that card with him.

Fourth. if there is a dispute as to who should get the commission, the sales manager can quickly settle the matter by referring to his master file.

The Ways of Commerce Are the Ways of War

(*Continued from page 9*)

character, can be legalized by a license.

"That is the whole and center and substance of the 'Trading With the Enemy Act,' the restating plainly and definitely of existing law and the providing of licenses to do, under proper circumstances, anything thereby declared to be lawful.

"Now, there is in the bill, however, a very original, as far as I know a novel, clause.

"I need hardly say to you that there is a very considerable amount of property belonging to enemies in this country, money which has been invested by Germans or Austrians or others before the war. A very considerable body of stock in a good many corporations is so held.

"This clause provides a custodian, an official custodian, to whom all interest, dividends, etc., belonging to such enemies or enemy allies can be paid.

"In the original bill it had to be used for certain purposes, but in the present form it may be used to purchase Government bonds, so that in that way the property of enemies may be used to finance the war against them, with the understanding, which is a very interesting one and one which is the act of a good sport like Uncle Sam, that this property is not confiscated, but it is by the alien property custodian to be preserved and after the war Congress may, at its own will, dispose of it as it sees fit; which means, of course, that it is quite possible, I think it quite probable, that it will be returned after the war intact to its original enemy owners, we having had the use of it meanwhile for our own purposes.

"That, I think, is an entirely novel piece of legislation. It has certain interesting adjuncts. A debt due to an enemy or to an ally of an enemy can be paid to an alien property custodian and a full discharge thereby had of the debt, so that obligations due to Germans or Austrians or Turks or Bulgarians can be cancelled by the payment to the alien property custodian in this country.

"Now, I think that, with one exception of a great deal of interest to you, constitutes the weight of that measure. The exception has to do with patents.

"It is deliberately left open in the bill for an American citizen to obtain, providing Germany shall reciprocate, patents in an enemy country during the war and for our enemies to obtain patents in this country during the war, and it is also provided that any American manufacturer or industry may apply to the President or to the War Trades Bureau, where it has been placed by the direction of the President, for a license to use, during the war, any patent belonging to an enemy or to an ally enemy existing and valid in this country.

"He may use that patent if he secures a license for a very small fee, limited, I think, to $100, but he must pay 5 per cent of the value of the articles which he makes under that patent to the alien patent custodian.

"At the end of the war the law provides that the foreign owner may sue in our courts within a year for a royalty for the use of that patent, and if he recovers, the law provides that any defense which would ordinarily be made against such a suit shall be deemed valid.

In that case, if he should recover, then this 5 per cent fund that he has paid in, so far as it goes, shall be used to pay the judgment. And if he does not recover, or if during the year he does not bring suit, then the 5 per cent is to be refunded to the American user.

"Now, that is a principle of a great deal of value and already in one important case has been brought to my attention by parties desiring to avail themselves of important patents now existing in this country."

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Winter Business

Have You Started Yet?

Away on Your Toes

HAVE you started yet to get some Winter Business? It CAN BE DONE if you get up on your toes and make a flying start just like one of those football boys who gets away like a shot the minute the ball is snapped.

On these pages are shown a window display specially set up by MOTOR WORLD'S window department. The goods used are the Boyce Motor-Meter. Anybody can set up this window out of his ordinary stock. The window was so made that extra stock and fixtures are not necessary. As a starter

Trim This Window

Alongside the window are directions for setting it up. They are so simple that nothing more needs to be said. If you have no background make one of 2 x 4's, wire and cloth. And if you want to make signs get some card ink and a small brush from any stationer and go to it. The cards you can make will be plenty good enough.

Run Some Ads

Take the advertisement shown on this page and use it in your local papers in about the size of space shown. If you want more ads take some of the letters on the opposite page and make copy of them. Stick up a catch-line that will hit the motorist's pocketbook and the body of the letters will make good ads.

Use Form Letters

Send out Moto-Meter Letter No. 1 about two days before you trim the window; then when the motorist sees the window he will be again reminded of what you said in the letter. If you care to use the rest of the letters—and that is good business—send them out about four or five days apart. Slip into them some small inserts advertising the Motor-Meter. These letters should go to a list of car owners whose cars you know are NOT equipped with Motor-Meters at the factory. Don't send the letters to cars that are already equipped as that means a waste of postage and paper.

There is money to be made this winter, even though it looks like a hard winter. The fact that it looks like a hard winter is the very reason you should jump into things with a wallop and fight for Winter Business.

Supposing Your Motor Should Freeze

It would cost a lot of money, wouldn't it? And if the motor got too hot because you were trying to keep it warm that might cause as much damage as freezing.

The safe way is to KNOW the temperature of your motor. The only way to know is to use a Boyce Moto-Meter. This little device gets the temperature of your motor and sticks it right up in front of you on your radiator cap.

You always have the temperature of your motor in front of you. If you see the red mercury dropping you warm the motor up. If it gets too high you cool it down. And the only way—aside from guess-work—is to have a moto-meter.

Come to our store and see how cheap an investment this damage-preventer is. And see how easily it fits your car.

Blank & Blank Garage

Tel. Prospect 123 7 Hopedale Avenue

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Here's Another Window

Set It Up This Way

IN setting up this display three boxes can be used if pedestals are not available, the center one to be about 18 in. high, 24 in. long and 18 in. deep, the end ones 8 in. wide and 24 in. high. They can be made very effective by covering the floor and boxes with blue crepe paper.

The feature of this display is the Ford radiator with Boyce Moto-Meter attached below the stand showing the three Boyce Moto-Meters. The sign can be placed on a stand or hung on the background of the window.

In setting up the display it is always advisable to show both sides of the Boyce Moto-Meter. In this display we have two full page ads from MOTOR WORLD, *one on each side. These can be substituted with two signs with reading matter of any description the dealer may desire to use.*



Motor World Window Service *Fashion Camera Studios*

Use These Letters

Moto-Meter Letter No. 1

Isn't it often perplexing when you wonder just how warm the inside of your motor is?

And wouldn't you always like to know whether you were running too hot or too cold?

There is a way you can have this information and have it always in front of you when you drive your car. The Boyce Moto-Meter does the trick.

Here is how it does it: It has a little thermometer that extends down through the top of the radiator cap into the top of the radiator and has above the radiator cap a thermometer.

There is a possibility that you may run too hot even in the winter, but your greatest danger during the coming months is from cold, not heat. This moto-meter will serve to guide you. It will tell how hot the motor is and enable you to judge how long you may let it stand on the street without danger of freezing.

These are days when we must KNOW. Guessing has gone out of style. One reason we like to KNOW is that knowledge enables us to avoid disastrous results such as ruined motors and bursted radiators.

Moto-Meter Letter No. 2

How much will it cost you if cold or heat gets in its quick work and ruins your motor or your radiator?

The cost would be considerable, wouldn't it?

And after you had paid the repair bill you would wonder if there were not some way you could avoid such calamities.

There is a way.

The way is to know how cold or hot your motor is and thus prevent its going to extremes. And the instrument that tells you this is the Boyce Moto-Meter.

The moto-meter is simply a specially built thermometer that reaches down into the radiator and gets the temperature and then brings the reading up above the radiator cap where you can see it.

And all you have to do to put it on is unscrew your present cap and put one of these caps on in its place. Very simple, isn't it? And not at all expensive.

We have a moto-meter that fits your car. It will be a paying investment for you. Come in and see it.

Moto-Meter Letter No. 3

It's getting nearer and nearer to cold weather. And that means nearer and nearer to the possibility of a frozen motor.

One sure way to avoid a frozen motor is to have a watchman on the job who will tell you when you are getting too cold. And he should also tell you if the motor gets too hot.

This little watchman is the Boyce Moto-Meter. It extends down through the radiator cap into the radiator, takes the temperature and shows the reading above the cap where you can see it all the time you are driving.

And it is no job at all to put one on. The meter is built into a special radiator cap that fits your car. All you have to do is to drive up to our store, let us unscrew your cap and screw on a moto-meter.

Then when you drive away you'll have always in front of your eyes the temperature of your motor. A repair bill costs money. A moto-meter costs little. The moto-meter is a good investment.

Come in and get one.

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Army Trucks Reach Washington

Even President Wilson Turns Out To Welcome the Two Vehicles to the Capital

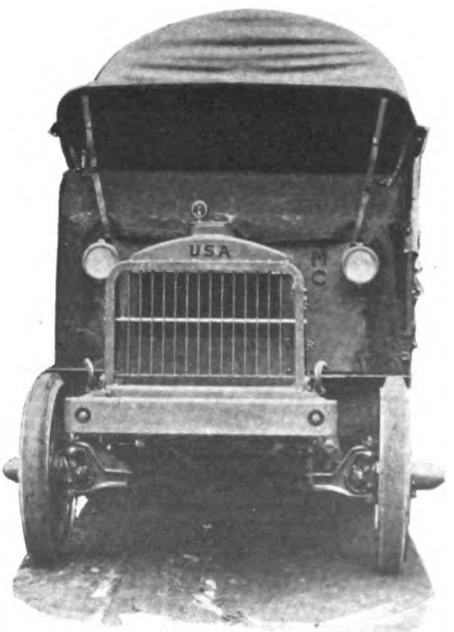
WASHINGTON, D. C., Oct. 19—The first two heavy duty war trucks which the Quartermaster's Department of the Army, assisted by the Automotive Products Section of the Council of National Defense and the Society of Automotive Engineers, designed, were officially delivered to and accepted by the Secretary of War, Newton D. Baker, to-day, in the presence of many important officials.

Secretary Baker, following the acceptance of the trucks, stepped into the driver's compartment and drove the truck himself from the grounds behind the State, War and Navy Building out into the street and around the grounds.

President Wilson and members of his Cabinet viewed the trucks later in the day, when they were driven to the White House Park. The President and all officials were outspoken in their admiration for the new engineering success. and remarked at length about its importance to the National cause.

H. L. Horning, chairman of the Automotive Products Section of the War Industries Board, discussed the truck at length with President Wilson, who was particularly interested in the short schedule allowed for the design and production of the first truck and in the remarkable record which even exceeded the scheduled time. The President also was interested to learn that the trucks can operate efficiently on inferior grades of fuel if the necessity arises. He expressed great satisfaction at the promptness with which many manufacturers of the parts responded.

Secretary of War Newton D. Baker in accepting the trucks said: "There are some very significant things about this moment. We are assembled here to see



the fruits, the embodied fruits of the application of American ingenuity and patriotism in the service of a great national cause.

"It used to be the custom in ancient times in war to bring back, for the delight of the home people, long troops of captives and much enemy spoil. I take a very high delight in feeling that one of the by-products of this rational effort on our part replaces the ancient captive train with fresh and serviceable achievements of science, ingenuity, American skill, and I look upon these trucks as trophies which despoil nobody else, *but which enrich America.*

"It is of course true of modern war that it is a scientific combat. In the very highest sense of the word all of the advances of modern science are being called into service in order to enable us to attain superiority over our adversaries. In America we have seen many stimulating evidences of the willingness and enthusiasm with which our people are co-operating in our preparation, but I know of none more significant than the two mechanical triumphs which have been worked out in the production of the Liberty motor for the airplane service and the production of the standardized truck for army transport. The enormous economy of this simple machine, with its interchangeability of parts, its facility of dispersed manufac-

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ture, is so great that I have no doubt that both our own army and those associated with us will regard this as one of America's substantial contributions to the war.

"I want to say to those who have been engaged in this work that while their occupation has seemed somewhat less spectacular, perhaps, than the uniformed military activity of the soldier in the battle field, it is in no sense a less significant contribution to the advancement of our national cause. Therefore, on behalf of the Government, and notably on behalf of the War Department, I express to all those who have been instrumental in bringing this great thing to pass our very grateful and hearty appreciation, and I extend to them also the compliments of the Government upon the speed and certainty with which they have done their task, and the fine success which has attended their efforts."

Others included among the prominent officials present were Postmaster-General A. S. Burleson, Secretary of the Navy Josephus Daniels; Christian Girl, chairman of the Military Truck Production Board, and his staff; Howard E. Coffin, Council of National Defense; Walter S. Gifford, Director of the Council of National Defense; Everett L. Crawford, Percy R. Pyne, 2d, and Preston Davie of the Council of National Defense; Col. E. A. Deeds of the Aircraft Production Board; Major B. D. Gray, Capt. A. J. Slade and Charles Bush of the Signal Corps; Thomas A. Edison, Peter Cooper Hewitt, General McLaughlin, British Attache; Major W. G. Wall of the Ordnance Department, and F. A. Scott, Chairman, and R. S. Brookings of the War Industries Board; C. W. Stiger of the Automotive Products Section; W. B. Stout of the Aircraft Production Board; Major H. A. Hegeman and staff; F. G. Diffen, Chairman of the International Aircraft Standards Board; Alfred Reeves of the National Automobile Chamber of Commerce, and Coker F. Clarkson, General Manager of the Society of Automotive Engineers.

The acceptance of the trucks by the War Department marks one of the greatest engineering successes of the war. Speedy and efficient transportation of supplies to advancing armies is one of the chief factors making for victory in modern warfare, and the new truck is undoubtedly destined to revolutionize army truck work in operation and maintenance. It will also play a large part in affecting truck design in commercial circles, as the Quartermaster's Corps will allow commercial manufacture of these trucks under certain qualifications. Now that the new Heavy-duty War Truck, as it has been officially named, is a reality, the remarkable work of design performed by the Society of Automotive Engineers in co-operation with the Automotive Products Section of the War Industries Board and the Quartermaster Corps stands out in bold relief.



Even President Wilson turned out to welcome the two army trucks which were driven from Lima, Ohio, and Rochester, N. Y., to the National Capital. This is Mr. Wilson with his hand on the radiator of one of the trucks

Produce 40,000 Republics

ALMA, MICH., Oct. 19—The Republic Motor Truck Co. will manufacture 40,000 trucks during the coming year, according to the plans of the production department. In order to care for this increased production, additions to the plant are now under way which will increase the shop floor space by 70,000 sq. ft. The production from Jan. 1, 1917, to July 1 shows that 9677 trucks were produced which is 3600 more than was produced in the same period of 1916, and the planned increase for 1918 shows a still greater increase. At present 1500 men are employed and this amount is more than twice that of a few months ago.



Not all the going was good going. This shows that the drive to the Capital was something in the nature of a real test

Wolverine Cars on View

KALAMAZOO, MICH., Oct. 19—The Wolverine Motor Car Co. has increased its capitalization to $250,000. The first models of the Wolverine Speedway Special are now being exhibited. This car has a wheelbase of 117 in., weighs 2340 lb. and, it is stated, is capable of 100 m.p.h. Aluminum enters largely into the construction. It is planned to start active production in November and material is on hand for manufacturing 600 cars during the coming year.

Detroit Starter to Use Ward Leonard Equipment

DETROIT, Oct. 19 — The Detroit Starter Co. has made arrangements with the Ward Leonard Co. of New York City for the exchange of patents and for a closer working relation. In the future all subsequent electrical systems will be equipped with the Ward Leonard controllers. The Detroit Starter Co. manufactures Genolite lighting systems and the speedorator for Ford cars. H. Kirk White is secretary-treasurer and attendant with the above changes the factory is being expanded to care for an increased output.

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About the Antediluvians

By Ray W. Sherman

We Have Received This Letter

DEAR SIR: I had thought that your wonderful missionary work among dealers and garagemen had practically taught every one of them the advisability, to say nothing of the necessity, of eliminating the old go-as-you-please methods, but the attached copy of a report from one of our field men will tell you confidentially that some of them still live, even in a town of some size, such as ————.

You and your "Reilly" have already treated this topic from every possible point of view, and I do not know that more could be said than you have said, but knowing how close this matter is to your heart, I thought you would be interested to see that some antediluvians still survive. Very truly yours, ————.

The letter is from a manufacturer of accessories of a specialized kind. The report he mentions says the dealer had a slovenly place of business, took little interest in it and was willing to surrender the agency—which is a good one—if the manufacturer didn't like the way the dealer handled it.

"WHAT do you know about this?" exclaimed Ben Doyno, accessory dealer and jobber, as Reilly put on his hat and prepared to go.

"What?"

Doyno held out a report from one of his road men, who was quite disgusted with the representation the Doyno company had in Lindenberg, a young city forty miles to the north. The road man said all sorts of things about Miller, the dealer. Miller, it seems, had merely monkeyed with one of Doyno's pet lines, the Squib carbureter account.

Miller's workshop was disorderly. It lacked system. There was no provision for the service on which Doyno prided himself. Miller admitted all this but could advance no reason or excuse for conditions. He said he wasn't deeply interested in the line and hadn't considered the possibilities of developing it. In other words, he was just an exister, and that's about all.

"Some report!" said Reilly with a trace of a smile.

What's a Squib Line

"Yes! Some!" agreed Ben. "That's one of my greatest troubles, Reilly. I can't get dealers to cash in to the full on the possibilities of the Squib line. It's a big money maker if they only handle it right. We give each dealer exclusive representation. We will assist him in many ways in developing the business, and the factory will help too, but we don't seem to get across 100 per cent as we should."

"It is rather hard, isn't it, Ben?" replied Reilly. "I guess we all have those same troubles. It's hard to get the full co-operation you expect from the dealers in your organization.

"I have known Miller for several years. In fact, he sells the Sennett in his town and I guess all your road man says is true. I've tried to get him to make more money on the Sennett up in his section, but I don't seem to be able to get him to co-operate as I think he ought to.

If He'd Only Co-operate

"Why, Ben, if he would only co-operate with me I would show him how to make a lot of money. For a starter, I'd help him straighten up his shop, put in a system that would keep what money he makes and help him get more business.

"I would help him get squared away in a real salesroom. And I'd help him get a sales campaign under way that would sell him two cars where he now sells one. I'd be willing to spend a lot of my own money helping him build his own business, but I've never been able to get him to enthuse very much.

"It certainly does make you sore, doesn't it, Ben? I can shut my eyes and see visions of Sennetts running all over Miller's territory like fleas on a dog. All that is necessary is that he take a little more interest in the business. I can see his salesroom bright with lights, his shop humming all winter and the shekels tinkling into his cash drawer, but then I open my eyes and it's still autumn and I'm still writing letters to Miller and he's still plodding along in the same old way.

"There's got to be a change, Ben. It's coming too. The days when any old fellow could skin along and get by are fading. The competition and the weeding out that we all have talked about for so many years are close at hand. The war has shoved business ahead by many years. Things we didn't dream of six months ago are happening over night. Laws are being swept into the discard. Factories are switching over into entirely different fields. People are doing things that they never heard of six months ago. The big change is close at hand.

When This War Ends!

"As soon as the war ends—and let us hope it won't be long, but I'm afraid it will—business isn't going to travel in the old way with its eyes shut and with indifference to poor methods. We are having advanced efficiency jammed down our throats by the new conditions—and we like it. And after the war ends we're going to be more efficient than ever.

"We are going to have better dealers. Those that aren't up to par aren't going to be able to stand the pressure of war conditions. They won't be able to keep their crafts afloat during the storm that is upon us, and after the storm there is going to be a new and better crop.

"Miller may have good reasons for not liking your line or my line. But there are many reasons why I don't like Miller and his ways of doing business. He works on old before-the-flood plans—which are no plans at all—and his place of business isn't a fit place for the line of cars I handle. But what can I do? I have tried hard to make him a better dealer. The only other thing left is to get some live salesman, hook him up with a banker and start a new company in business. I don't like to do it, but I may have to some day.

I'm Going to Sell More Sennetts

"I'll say this much, Ben: I'm going to sell more Sennetts if I have to go out and sell 'em myself."

"Yes," said Ben, "and while you're at it maybe you can tell me how I can get a hundred per cent representation for some of the little money makers I have kicking around here in my place."

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Stearns Issues Popular Straight-Line Bodies

Many Refinements Introduced—Gasoline Tank Now at the Rear

THOUGH still distinctively Stearns in appearance, the new models of the F. B. Stearns Co., Cleveland, Ohio, are characterized by the straight line body design that is at present popular. The distinctive white bordered Stearns radiator has been retained, but by making the corner between the sides and top of the hood more marked, and carrying the edge and shoulder straight through to the back of the car, the snappy appearance has been greatly increased. And this is accentuated by an increased tilt in the windshields on the open models.

There are few mechanical changes and most of these are in the nature of refinements that render maintenance and repair easier. On the 8-cylinder model the oil circulating pump has been placed down at the base of the crankcase, instead of on the front of the eccentric shaft as formerly. In this position it is not necessary for it to lift the oil, and the pump operates as long as there is any oil in the base.

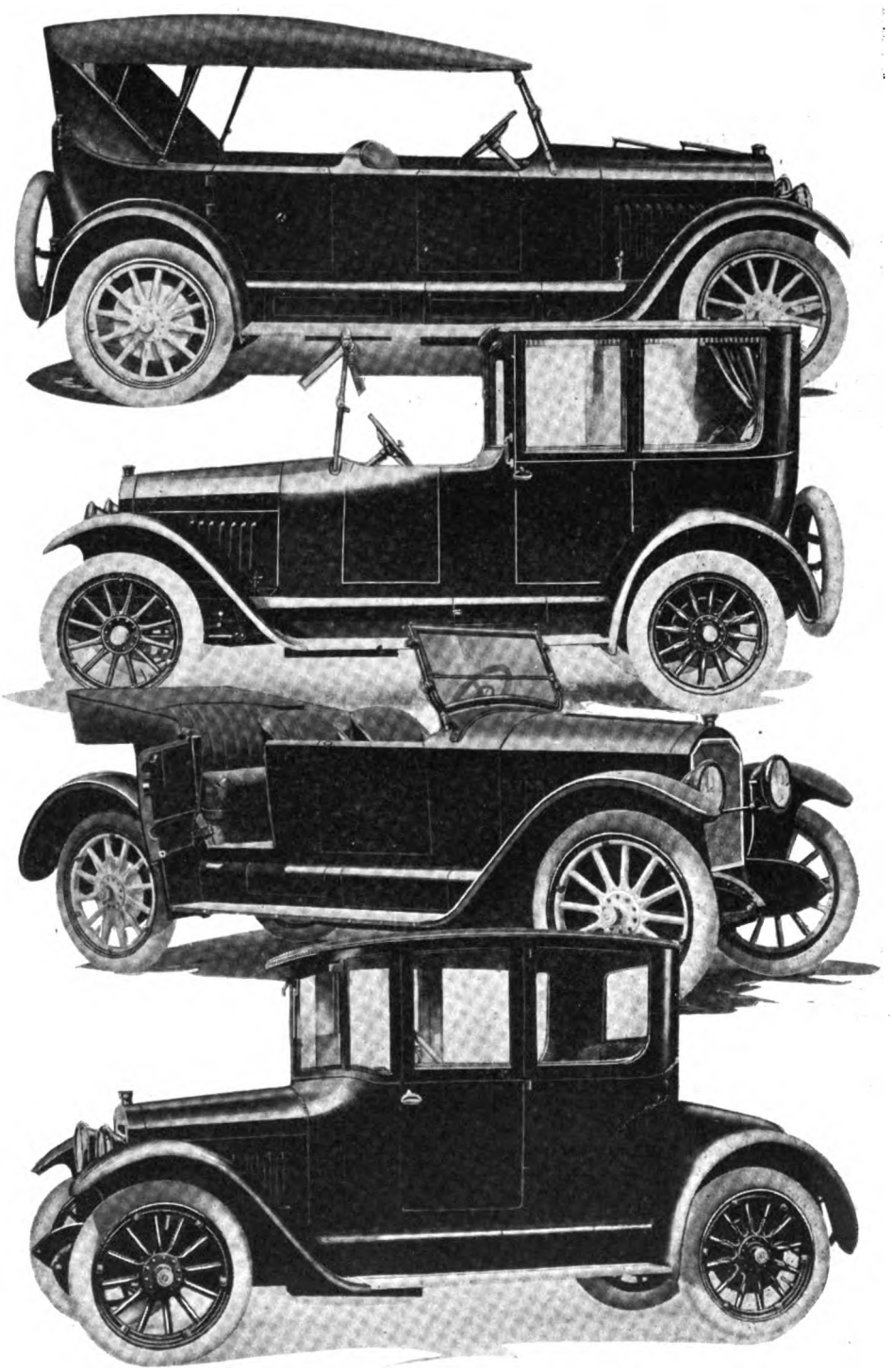
The oil distributor unit on the 8-cylinder has likewise been cleaned up and simplified. An oil heating coil is still used, whereby the oil is by-passed through a copper heating coil in the water jacket. In cold weather, the oil is quickly heated to a proper running temperature on starting, and maintained at a more constant temperature during operation.

Instead of the concentrated arrangement of the instruments on the dash as was formerly used, the instruments are now distributed symmetrically over the instrument board. This was, and is, the practice on the 4-cylinder model. Machined circular-section connecting rods are no longer used on the 8-cylinder model, I-section rods being used instead. Though cast iron pistons are still used, they have been made lighter, and the wrist pins are carried on bronze bushings.

Both models now use the Stearns multiple disk clutch. Last year this was used on the 8-cylinder, but a leather cone clutch was used on the 4-cylinder model.

On both models, the gasoline tank has been placed at the rear, instead of beneath the cowl as was the case last year. A Stewart vacuum tank is used to deliver the gasoline from the tank to the carbureter.

All tools are now carried in a special compartment in the door at the driver's side. This compartment is fitted with a lock, and provides a most convenient and secure place for tool storage. The tire carriers on all models is also new, a holder of the bracket type, riveted to the frame ends replacing the nest type formerly used.



Four new Stearns bodies—At the top is the seven-passenger touring, next the town car, immediately below the four-passenger roadster and at the bottom the cabriolet

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Andrae Celebrates 56th Anniversary

MILWAUKEE, WIS., Oct. 19—Julius Andrae, founder and president of the Julius Andrae & Sons Co., Broadway and Michigan Streets, Milwaukee, one of the largest jobbers of motor car accessories in the middle west, celebrated the fifty-sixth anniversary of the establishment of the business recently. Mr. Andrae is now 88 years old, but he spends part of each day at the office. The business is the outgrowth of a small blacksmithing shop established by Mr. Andrae on West Water Street, Milwaukee, in 1861.

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Repairshop Shortcuts

From The Motor World Roadman

No. 1405—RUNNING IN STAND

This stand was designed for running in the bearings and pistons of Buick engines after overhauling. It comprises an old Buick frame, cut off at each end, and mounted on angle iron supports, at about 30 in. from the floor. The engine to be run in is fastened to the frame in the usual manner, and a special driveshaft used to connect it to an electric motor is permanently mounted on a concrete base at the rear of the frame. By this, the bearings are run in and all stiffness removed, and the engine replaced in the car with assurance that everything is all right.

No. 1406—REMOVING WRISTPINS

It is not an easy matter to remove or replace wristpins without injuring the piston. Particularly is this true in the case of aluminum pistons. However, if a wooden block be provided, so cut away that the piston is supported on the lower half, and drilled for the exit of the wristpin, and a special punch placed beneath the arbor press plunger, the wristpin may be quickly removed or replaced without injury to the piston. If an arbor press is not at hand, a vise may be used to apply the pressure.

No. 1407—SHOP LIGHTING SYSTEM

In shops having high ceilings it is somewhat of a problem to so arrange the lights that the cars receive sufficient illumination, and to provide attachments for the inspection-lamp extensions. By suspending a horizontal beam from the ceiling on iron hangers the fixed lamps may be attached at a height that will provide adequate light for all general work. The extension plugs likewise may be attached to this beam, and when the lights are not in use they may be readily hung up out of the way. One of the most valuable features of this system is that the inspection-lamp cords are distributed from overhead directly to the work, and the common nuisance of lamp cords strung over the floor is avoided.—J. S. Perkins, Dodge Brothers Service Station, Pittsburgh, Pa.

No. 1408—ADJUSTABLE FLOOD LIGHT

An adjustable light that may be set to direct a flood of light directly upon the desired point greatly facilitates night repair. Such a light may be easily constructed by mounting two headlight reflectors on a board that is pivoted to uprights at each end, and carries adjusting quadrants, so that the board may be tilted and locked in any desired position. Mazda lights, connected to the lighting circuit, are placed in the reflectors. This lamp is also excellent for washrack use, as it may be easily moved from place to place.—L. G. Sterling, F. B. Stearns Co., Cleveland, Ohio.

No. 1409—AUXILIARY TRUCK JACKS

Auxiliary jacks are as essential in truck repair as in passenger car work, and an excellent set of jacks for this purpose may be made from an old internal-gear-drive rear axle. The axle ends are cut away and notched, and the axle cut in two. The two halves are then fastened together by three tie rods bolted through holes drilled in the axle web. The cost of this jack is practically nothing, and it is exceptionally strong, durable and not easily tipped over.—C. D. Crawford, Lawrence Motor Co., Pittsburgh, Pa.

No. 1410—HACKSAW STOCK REST

When cutting off material in a hacksaw, or in working on a long bar of stock in the forge, it is necessary that some support be used for the free end of the stock. A convenient and adjustable support may readily be made by using an old differential half for a base, carrying an upright piece of pipe, that in turn holds the adjustable T-rest. A setscrew in the pipe permits the rest to be locked in any desired position.—J. S. Perkins, Dodge Brothers, Pittsburgh.

No. 1411—REFACING CONE CLUTCHES

This device was designed for forcing new clutch facings onto Pierce-Arrow clutches, but could readily be applied to many other clutches of a similar type. It comprises simply a wooden base somewhat larger than the clutch, and carrying a central stud. As the clutch leathers provided for this clutch are already fastened at the ends, it is only necessary to set the clutch into the leather, place it over the stud and draw the two together. A small amount of shellac is applied to the clutch and allowed to set before the stud nut is loosened. After this, leather pegs are used to complete the bond between the leather and the clutch.—C. F. Mohr, Pierce-Arrow Service Station, Pittsburgh.

No. 1412—PORTABLE SHOP CRANE

A portable shop crane may be constructed from 3-in. pipe and pipe fittings that has sufficient capacity to handle practically any part of passenger car work. The base is triangular, and the jib is supported at the middle point by a triangular upright. The jib should be a continuous piece of pipe, as its strength would be impaired were it divided at the junction with the upright. The load is lifted through the action of a crank, ratchet and drum, by which the rope is pulled over a fixed puller and around a movable pulley, the ratchet permitting the load to be locked in any position.

No. 1413—LARGE-CAPACITY TRUCK

When moving bulky parts, such as stock from the elevator to the stockroom, a large-capacity truck permits the work to be done with a minimum of lost motion. An old frame, mounted on swiveled casters, and having guard rails at each end, provides such a truck. On this a large amount of material may be piled and carried to any desired point. This applies to bodies, engines, axles, etc.—L. G. Sterling, F. B. Stearns Co., Cleveland, O.

No. 1414—RADIATOR REPAIR STAND

Radiator repair is awkward unless a suitable stand is used to hold the radiator during the work. A stand permitting the radiator to be held in any desired position comprises four leather capped uprights mounted on a wooden base. On these the radiator may be placed flat, inclined slightly, or upright, so that the part to be repaired is accessible.—F. E. Cooper, McAlister Bros., Cadillac Service Station, Pittsburgh, Pa.

Scrap Metal Prices

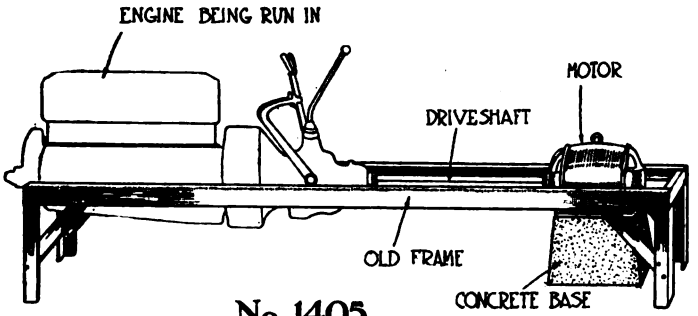
NEW YORK, Oct. 19—Following are prices paid by New York dealers for scrap metal during the past week. They are from *Iron Age:*

	Cents Per lb.
Copper, heavy and crucible	23.50
Copper, heavy and wire	23.25
Copper, light and bottoms	20.50
Brass, heavy	15 50 to 15.75
Brass, light	11.50 to 12.00
Heavy machine composition	21.50 to 22.00
No. 1 yellow brass turnings	16.25
No. 1 red brass or composition turnings	19.00
Lead, heavy	7.00
Lead, tea	6.00
Zinc	6.00

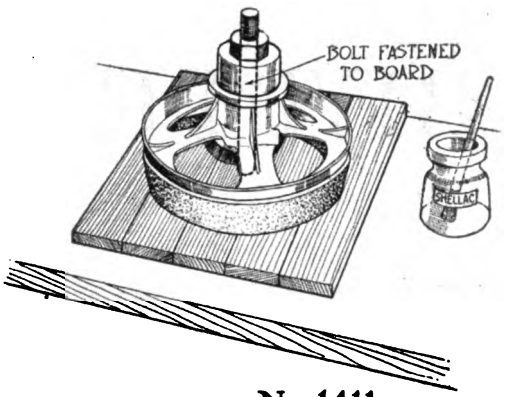
Gorey Increases Scope

NEW YORK, Oct. 19—Joseph C. Gorey has taken the Eastern agency for the Sterling universal joint; this, together with the Spicer Mfg. Co. and the Hartford Auto Parts Co. joints has placed Gorey in a position to supply universal joints to fit any car.

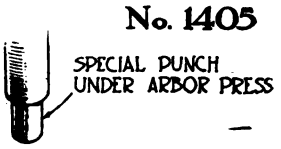
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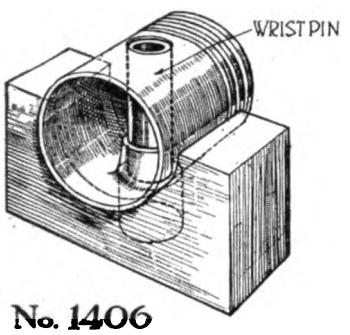


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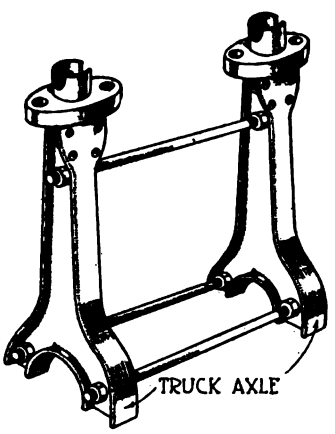


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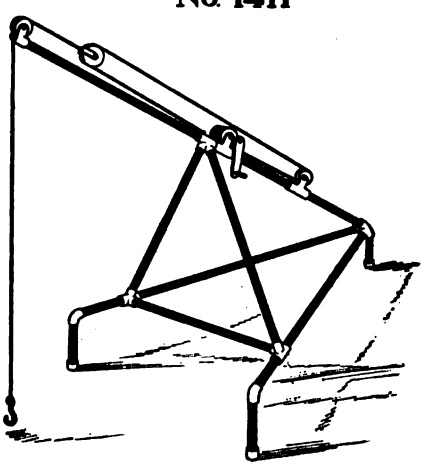




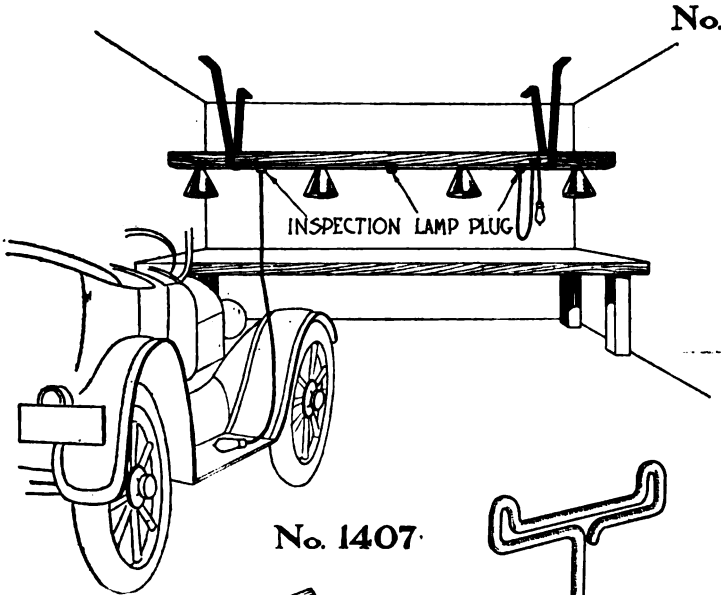
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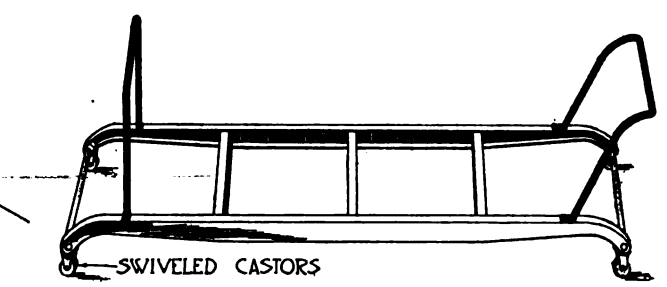
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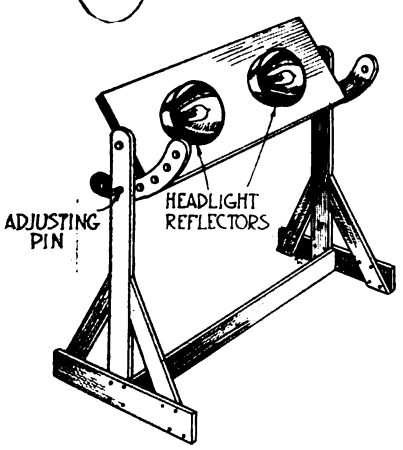
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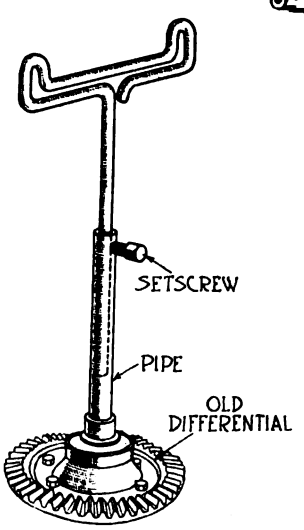
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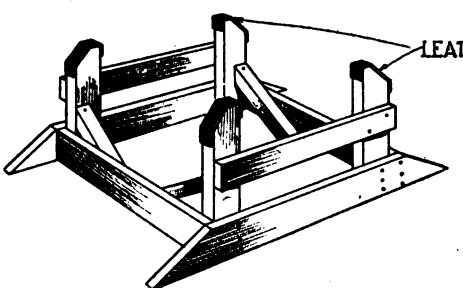
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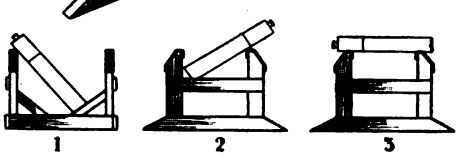


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A Department of

BETTER MECHANICS

No. 41

Adjustments on the Scripps-Booth Gearbox—Model G

By S. T. Williams

BECAUSE of the fact that gearbox troubles are usually not so great as to cause actual failure of operation mechanics ordinarily do not give much attention to gearbox work. Treatments tending to relieve the trouble without removing the cause are commonly used, an example being the use of heavy grease and ground cork to quiet noisy gears. The mechanic should endeavor to find and remove the cause of the trouble instead of attempting to conceal its presence.

The gearbox used on the Scripps-Booth Model G is manufactured by the T. W. Warner Co., and the construction is similar to that used on many other cars. In general, the location of trouble and method of repair will apply to all sliding gear work.

Evidence of Trouble

1—Noisy gears when running on low, intermediate or reverse.

2—Gears are hard to shift and engage with a grating noise.

3—Oil leakage from the front and rear drive shaft bearings.

4—Gears refuse to stay in mesh.

The most common cause of noisy gears is the lack of sufficient lubrication or the use of improper lubricant. The Scripps-Booth Co. advises the use of a light transmission grease, similar to the 600-W, in an amount sufficient to barely cover the gears.

It is true that noisy gears can be quieted by the use of a heavier grease or by placing ground cork or asbestos fibre in the grease. But this is always done at the expense of the bearings, and in many cases will cause the bronze bushings in the countershafts to burn out because of insufficient lubrication. The ball bearings on the main shaft also suffer from this treatment. When noisy gears are present the gearbox should be removed and torn down.

Hard shifting is often caused by improper clutch adjustment. If the clutch is adjusted too tight it will not disengage, and will cause interference between the spinning gears. This condition may be determined by removing the floorboards, and with the engine idling note whether the driveshaft leading to the gearbox stops spinning shortly after the clutch is thrown out. If not, the clutch should be adjusted.

If the clutch adjustment is all right, and the hard shifting still persists, it is doubtless due to the fact that the gearbox is out of line. A simple test will show whether this is the case.

Aligning the Gearbox

When the gearbox is out of line pressure is applied to the mainshaft bushings and the countershafts, causing the gears to rotate even when in neutral. The following is the test for alignment of the gearbox:

1—Remove the floorboards.

2—Disconnect the driveshaft flange from the rear of the gearbox and drop the driveshaft.

3—Start the engine and leave the gears on neutral.

4—With the engine idling, grasp the driveshaft flange at the rear of the gearbox. If the rotation of this flange can be stopped with little effort, the gearbox is in perfect alignment. If considerable effort is required to hold the

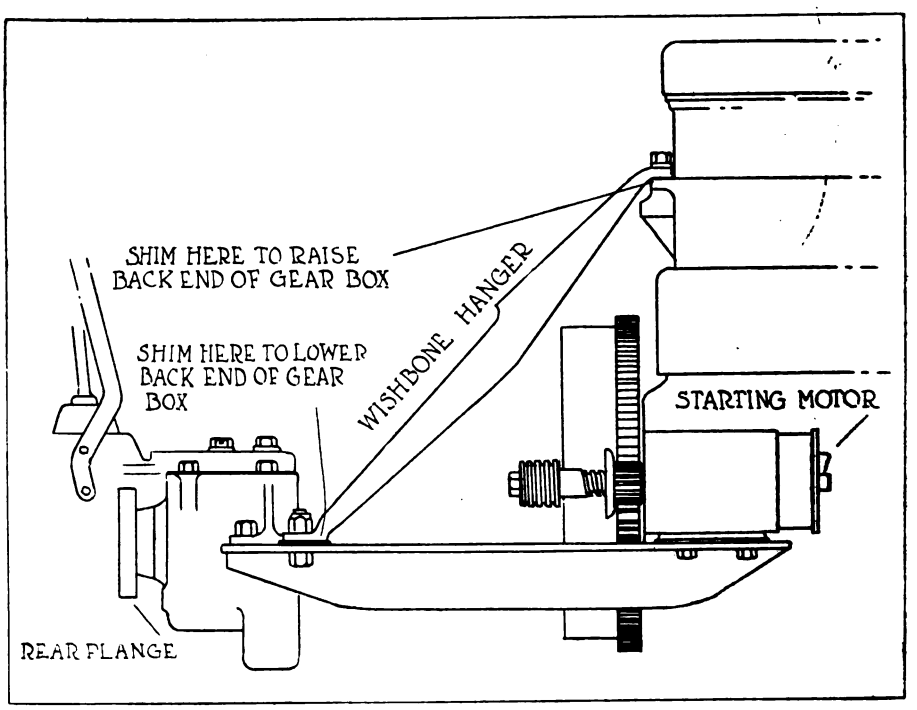
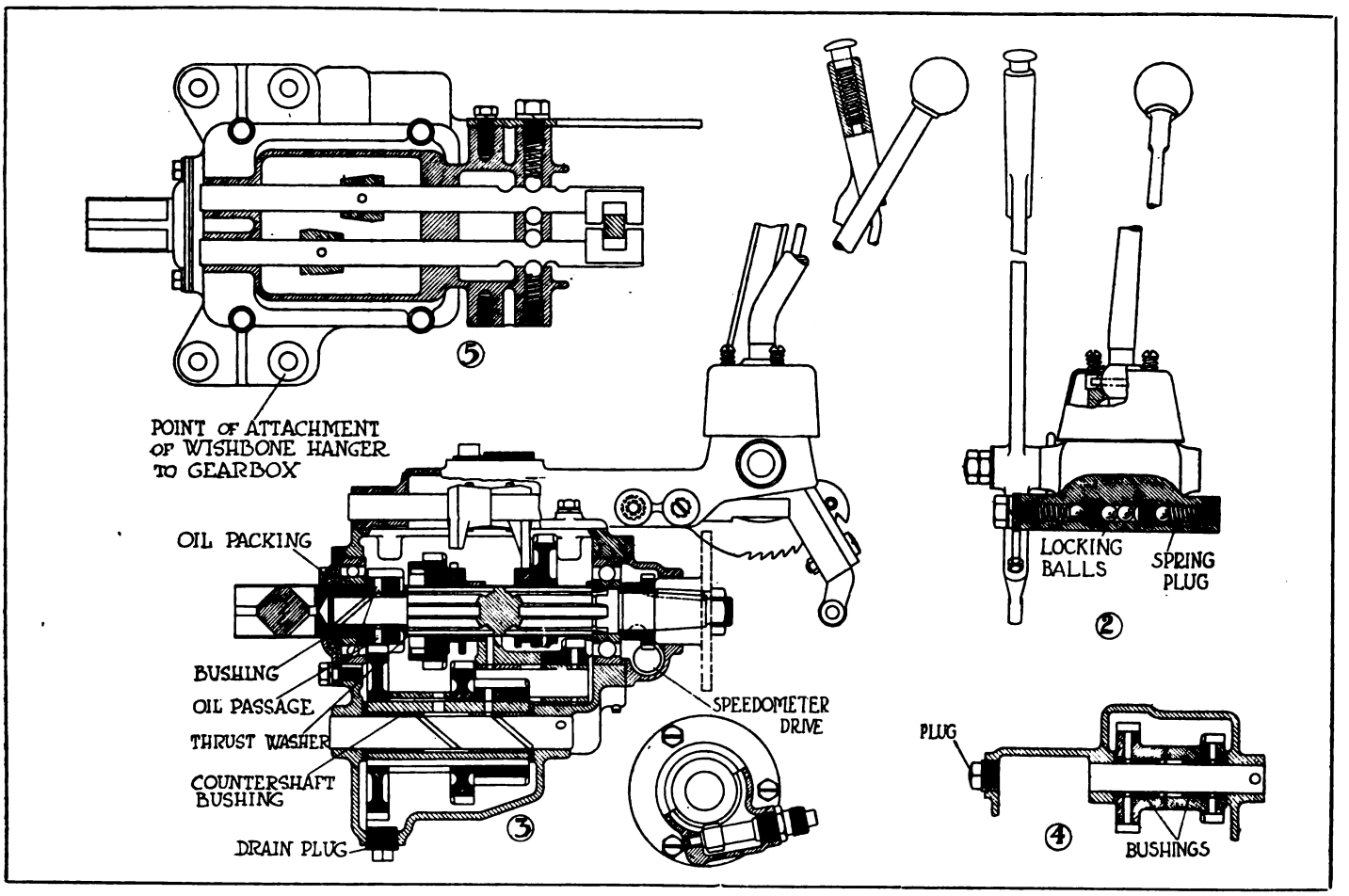


Fig. 1—Method of shimming under wishbone hanger to bring gearbox into alignment. All bolts should be kept tight

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flange the gearbox is out of alignment.

It is difficult to determine in which direction the gearbox is out of alignment, though the mechanic can be quite sure that it is "up-or-down" and not "right-and-left." The best method is to raise or lower the back end of the gearbox and see whether more or less effort is required to hold the rear flange, with the engine idling and the gears neutral. The position requiring the least effort is correct.

The gearbox is held in alignment by a wishbone hanger connecting the sidearms to the engine. This is shown in Fig. 1. To raise the back end of the gearbox, the bolt holding the wishbone hanger to the engine is removed and shims placed between the hanger and the engine support. Before testing the effect of the shim the bolt should be replaced and tightened.

To lower the back end of the gearbox, shims may be placed between each side of the wishbone hanger and the gearbox sidearm. All bolts holding the gearbox in place should be drawn as tight as possible after the shims are in place, so that the test for alignment will be made while the gearbox is in a fixed position. When the gearbox is in alignment the driveshaft may be replaced.

On a new car failure to stay in the intermediate or lower gear usually indicates that the gears are not yet worn to a seat. The remedy is to run the car about a mile on the speed causing the trouble. On an old car, however, it may be due to worn or lost springs or balls in the shift lever lock; or possibly to excessive wear in the gear teeth themselves. The shift lever lock is the first thing to examine in this case, as trouble from worn teeth rarely occurs.

A sectional view of this locking device is shown in Fig. 2, and occasionally the locking plugs will become loose or lost, throwing the lock out of commission. These plugs may be removed and the springs and balls examined for breakage or wear. The springs should be "live," and the balls should not be worn.

In cases of actual failure of the gears to operate, if excessive noise is present, or during the usual overhauling, it is advisable to remove the gearbox from the car for cleaning and replacement of worn parts. The following is the method to be followed:

1—Remove the floor and toeboards.

2—Remove the gearbox cover, together with the shifting and brake levers. This may be done later, but it is advisable to get them out of the way now.

3—Disconnect the propeller shaft flange at the rear of the gearbox and drop the propeller shaft.

4—Remove the wishbone hanger, preserving all shims so that they may be properly replaced on assembly.

5—Remove the gearbox retaining bolts and lift the gearbox back, up and out. Some mechanics think it necessary to first remove the engine, but this is not the case. The gearbox can be readily removed as above directed.

6—Place the gearbox on the bench, and with a common puller remove the rear flange. This is held on a tapered shaft by a key and nut.

7—Remove the rear main shaft bearing cover and packing, exposing the rear bearing. This bearing may be readily removed.

8—The splined shaft may then be drawn out, leaving the gears in the gear-

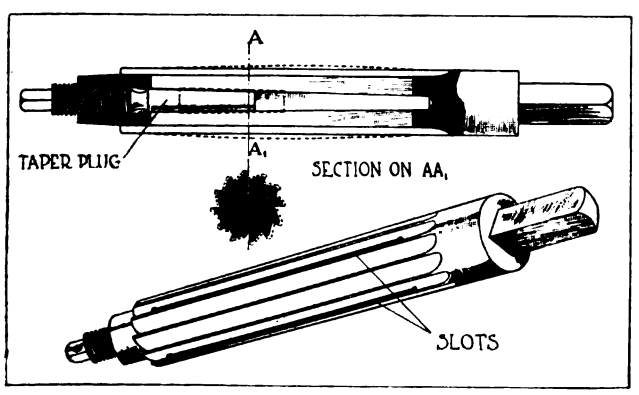


Fig. 6—Expanding reamer for transmission work

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box. Unless absolutely familiar with the construction of the gearbox, the mechanic should carefully note the location of the gears, washers, etc., to facilitate proper assembly. However, the sectional view of the gearbox, shown in Fig. 3, will serve as a guide for this.

9—Remove the front mainshaft bearing flange and packing, and pull the front gear assembly out together with the front bearing.

10—Remove the cotter pin holding the countershaft in position and drive the countershaft out to the rear. Then pick out the countershaft gears.

11—Remove the pin holding the reverse idler shaft in position, and drive the shaft out to the rear. A pipe plug in the housing may be removed, exposing the front end of this shaft. This is shown in Fig. 4.

All parts of the gears and shafts should be carefully washed and examined for wear. Particular attention should be given to the gear teeth to see that they are not burred in any manner. If this is the case, a fine, thin emery wheel may be used to dress down the burred portions. But nothing except the burr should be removed.

A small amount of wear is permissible to the gear teeth, but if any appreciable amount is present, the worn gears should be replaced. Some mechanics attempt to refit stub teeth to broken gears by annealing the gear, drilling and tapping at the tooth base, and screwing in steel pins that are later filed down to the required tooth shape. This should be only done in emergencies, as even if the repaired tooth should stand up it would be the exceptional mechanic that could restore the original heat treatment to the steel. The best method is to procure new gears from the factory for all broken or worn gears.

However, it is the bearings that should receive the greatest attention. The two ball bearings should be free and not chipped. If any looseness or play is present, it will tend to throw the gears out of alignment, and besides, the bearings themselves will be noisy. The remedy is to procure new ball bearings.

All other bearings are of the plain bronze bushing type, and looseness here will likewise cause noisy gears. The clearance between the bushing and the shaft on which it bears should be as small as possible, and yet permit the bearing to turn freely. If looseness is present, the old bushings should be pressed out and new bushings fitted.

Before doing this, however, the shaft should be checked up with a micrometer, and if more than .002 in. out of round, a new shaft should be provided. If the shaft is out of round, it would be obviously foolish to fit new bushings.

For this purpose a ¾-in. expanding reamer for the reverse idler shaft bushings and a ⅞-in. expanding reamer for the countershaft will facilitate the fitting of new bushings. The ¾-in. reamer will also fit the bushing at the inner end of the driveshaft. An expanding reamer well adapted to this work is shown in Fig. 6, but in the smaller shops a plain type reamer may be used. By lubricating a plain type reamer with oil it may be made to cut under size. Kerosene will cause it to cut slightly over size, and a dry reamer will remove a still greater amount of metal.

The bushings should first be pressed into place, and the necessary oil holes drilled, after which the bushing may be reamed to fit its shaft. The fit between the bushing and the shaft should be what is called a "running fit." As measured by micrometer, that will be about .00275 in.

The assembly should take place in the reverse order of the tearing down. The main point to note is that all the gears turn freely, and have no high points at which they bind. If these are present, it is usually due to improperly fitted bushings, and new bushings should be fitted into the offending gears. In replacing the gearbox in the frame, the directions on "aligning the gearbox" should be noted.

Olson 2-Ton Truck Equipment

AFTER more than a year of intensive experimentation, the Swedish Crucible Steel Co., Detroit, has developed a 2-ton truck equipment for converting the Ford. This is added to the line, which formerly comprised a 1¼-ton equipment, and the mechanical features incorporated are identical in each.

In this adapter the driving power is communicated to the rear wheels through the original Ford drive shaft, which is not altered in any way. The Ford universal joint is left in its original position, and an auxiliary drive shaft connects it to the drive shaft, which has been moved back with the axle to increase the wheel base.

The original rear axle of the Ford is also used, but so changed that it carries nothing but the torque, or driving load. The rear wheels of the truck, together with their bearings, carry large semi-elliptic springs, that in turn support the truck body. By this arrangement the truck load is transferred directly to the wheels themselves.

The drive is of the internal gear type, with a small pinion mounted on the end of the Ford axle, meshing directly with a large internal gear bolted to the wheel. Ball bearings are used throughout the rear construction, and all gears are cut from steel blanks, hardened, and the races ground to a finish. As the larger bearing, carrying the load, is of the slip type, it may be adjusted to compensate for any wear.

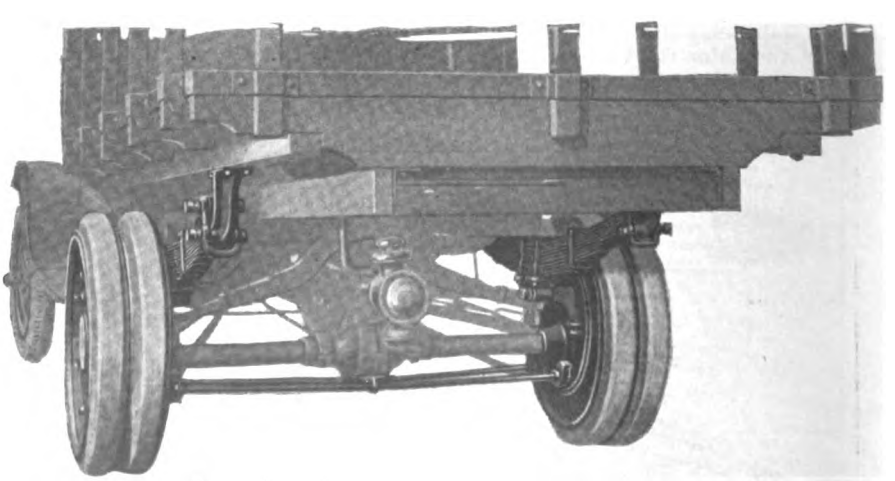
Through the gear reduction of the internal gear drive the final gear ratio is 7 to 1, which is considered the best ratio for this type of equipment.

Both the service and emergency brakes are mounted on the rear wheels. The original Ford service brake is removed and replaced by a new service brake shaft and pedal, connected to a 16 in. x 2 in. internal brake, the emergency brake operating through the lever as formerly. However, both the service and emergency brakes are connected, and both are applied through the lever.

The price of the 2-ton chassis is $875; of the body $150, and the complete truck, including special demountable rim front wheels, with straight side, 28 x 4 in. non-skid tires, is $1,025.

New Republic Building

ALMA, MICH., Oct. 17—The new building of the Republic Motor Truck Co. will soon be completed and the motor and transmission assembling will be transferred to it.



Rear view of the Olson-Ford 2-ton truck, showing the Olson equipment

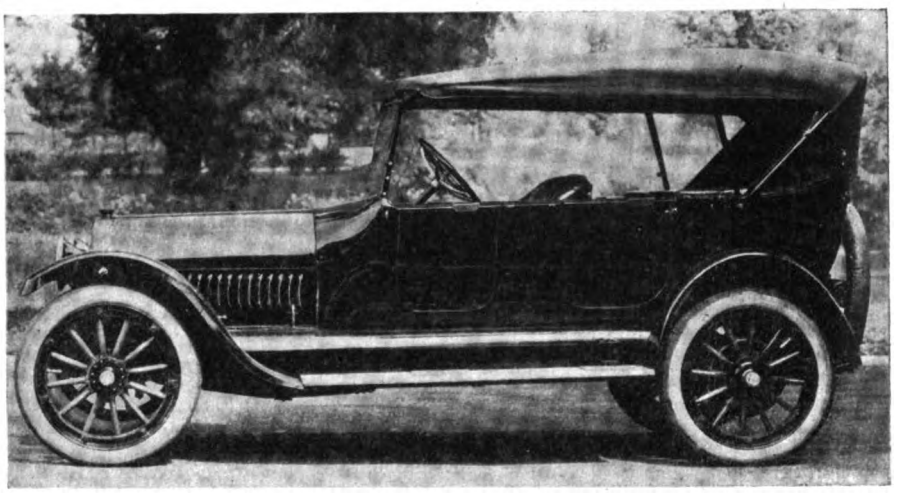
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New Studebaker Five-Passenger Cars

Body Lines Same as Formerly—Changes in Front Seats and Spring Suspension



An adjustable tilting steering wheel supersedes the former plain wheel



New series 18 Studebaker five-passenger, which sells at $1050 as a four and at $1350 as a six

THE new series 18 Studebaker five-passenger cars are mounted on the same chassis as the previous models and both the four and six are interchangeable. Body lines remain the same generally, but changes in the front seat and spring suspension give the impression of a longer, lower car.

There is a change in the seating arrangement of the five-passenger as compared with the seven-passenger Studebaker. Instead of individual front seats there is a straight seat placed lower than the individual seats of the seven-passenger. The elimination of the auxiliary seats permits the use of a new limousine type foot rest made of wood and covered with the same material as that of the tonneau carpet.

A metal robe rail extends across the back of the front seat and its fastening to the seat embodies integral a hand grip for entering the tonneau. The tonneau carpet is gray and metal bound linoleum is used in the driving compartment.

An adjustable tilting steering wheel supersedes the plain wheel of former models and is fitted with a corrugated rim. A new mounting giving a graceful tilt is used on the windshield.

Linoleum-covered, metal-bound runningboards replace the corrugated aluminum runningboards of the preceding models. Safety step plates are placed at the entrance of the tonneau doors.

The wheels and rims are the same as on the DeLuxe models carrying tires 35 x 4½ in. About one-third of the output will come through with natural finished spokes, the balance in black. There are two options in body color for both the four and six—Packard red and deep blue.

Changes in the chassis include lighter rear springs placed lower on the axle. Instead of a plain glass lens in the headlamps, a deflecting type is used. The top is of imitation leather with drab lining. Rear windows are plate glass, nickel trim. Gypsy curtains are fitted also. The price of the four is $1,050 and that of the six $1,350 f.o.b. Detroit.

Milwaukee Studying the Tax

MILWAUKEE, Oct. 18—A definite plan of procedure under the 3 per cent war tax has not yet been worked out by Milwaukee dealers. The Milwaukee Automobile Dealers, Inc., comprising practically every distributer and dealer in the city of Milwaukee, met on Thursday to discuss a course of action, but because of the inadequacy of the information at hand, no action was taken. The Milwaukee association is working with the national dealers' organization, and the procedure locally doubtless will be the same as that adopted elsewhere. As soon as definite word is received, a circular will be issued to all members suggesting how the war tax may be absorbed. That the tax will be passed to the consumer in its entirety is now believed practically certain. The only concern seems to be just how to apply the tax.

Dorris Absorbs Mogul Company

ST. LOUIS, Oct. 17—A reorganization of the executive staff of the Dorris Motor Car Co., which includes the absorption of the Mogul Motor Truck Co., plant, was completed last week. As a result, a much more aggressive policy is expected from the company. The reorganization began several months ago when Henry B. Krenning resigned as president and was succeeded by W. R. Colcord. Two weeks ago Webster Colburn resigned as secretary and treasurer and A. E. Schmid as director. These two have been succeeded by the election of M. L. Leathers, for several years manager of the Southwestern Branch of Bradstreet's Commercial Agency in this city, as secretary and treasurer.

George C. Griffith, president of the Mogul Motor Truck Co., was elected a director. This plant, which adjoins the Dorris plant, will be absorbed. It specializes in lumber trucks. B. E. Chappelow, president of the Chappelow Advertising Co., was elected a director.

Roy A. Gray, formerly with the Chappelow Advertising Co., has been made wholesale manager.

No Six-Cylinder Ross

DETROIT, Oct. 19—H. D. W. Mackaye, general manager of the Ross Automobile Co., is authority for the statement that the company will continue its eight-cylinder model and will not manufacture the six, which was announced some time ago. It is stated that the plant may be removed from Detroit to an eastern city.

Government Orders $6,000,000 Parts

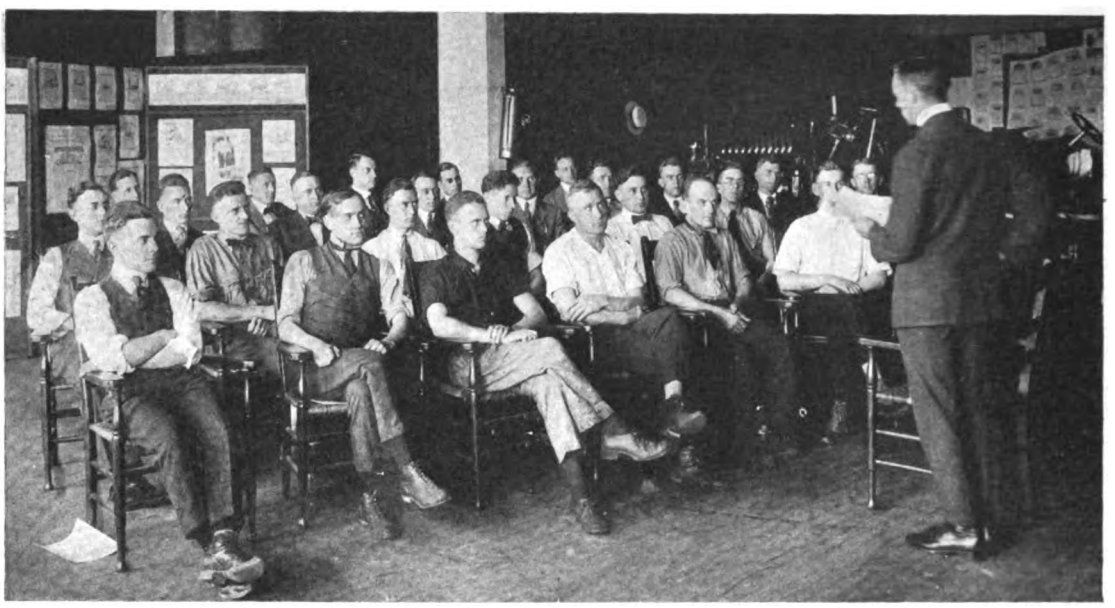
CLINTONVILLE, WIS., Oct. 18—The Four Wheel Drive Auto Co., Clintonville, Wis., has received an order from the Government for spare parts for F. W. D. army trucks, amounting to nearly $6,000,000. Delivery is to be made with the 3750 class B trucks which the company is now building for the Government.

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The Packard Service School

Employees Given Mechanical, Mental and Business Training—Are Paid While Learning

By Allen Sinsheimer



Explaining to a class of Studebaker employees the principles and policies governing the conduct of service stations in handling the needs of owners

WITH 58,000 dealer and repair establishments in the United States, makers are becoming keenly interested in the mechanical knowledge and ability of the workers in these plants and particularly in their ability to give efficient service to car owners. Several have already inaugurated schools at the factories where service managers and employees can be taught the mechanism and service principles pertaining to each particular product. Among these is the Packard Motor Car Co., which has just opened a new technical service school to provide technically trained men for service positions, and thus hopes to solve the problem of supplying trained men for its service stations.

In the selection of students the company gives consideration to the following factors:

Mechanical Ability	Affability
Physical Balance	Decision
Judgment—Tact	Personality
Honesty	Quickness
Health	Reasonableness
Approach	Resourcefulness

The plan of operating the school allows a living wage to all students enrolled regardless of age, and allows for increases in the earnings, based upon:

1. The student's usefulness to the company while learning.
2. His previous application to similar problems.
3. His previous experience in mechanics.
4. His previous technical education and training.

The school will also attempt to fit workers for factory positions as well as for field service. The school curriculum is divided into three sections:

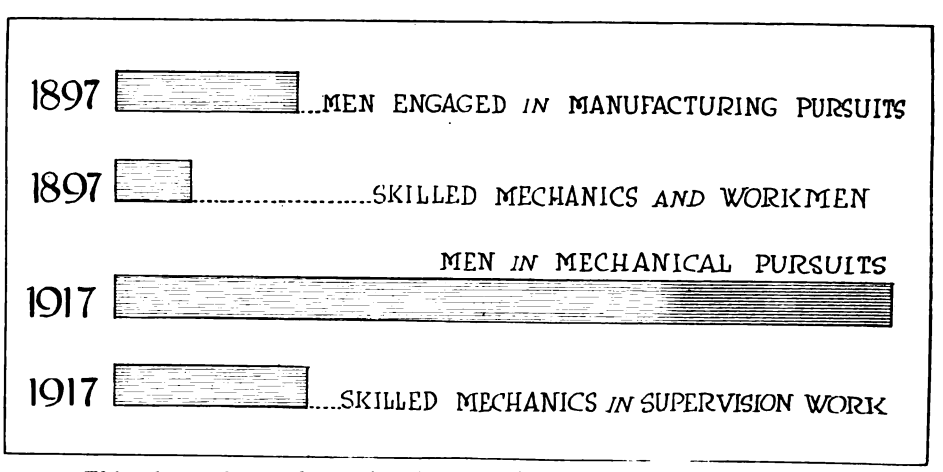
Mechanical training and underlying principles.

Mental training for independence of thought for solving service problems.

General business training to give better perspective.

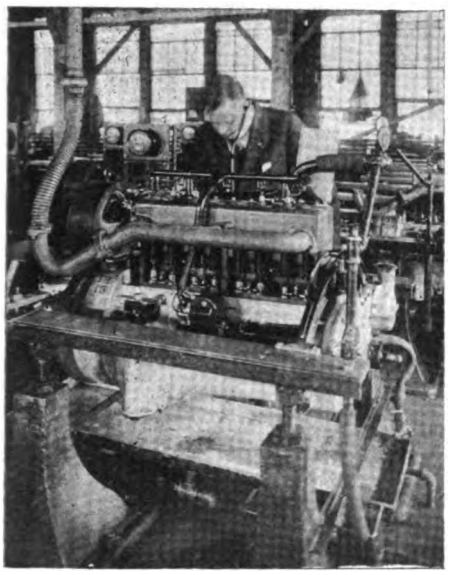
A night school division is also in operation where the service student can also take up draftsmanship, mathematics and allied subjects, thus allowing the pupil to secure practical and theoretical study by day and higher education by night.

Courses in the school are conducted by the technical service department with a supervisor responsible for the administration. Men of every age and nationality are accepted. The majority have had from 3 years to 10 years of experience before enrollment. Attendance at lectures is required from all students and written examinations are given frequently allowing for the grading of students ac-

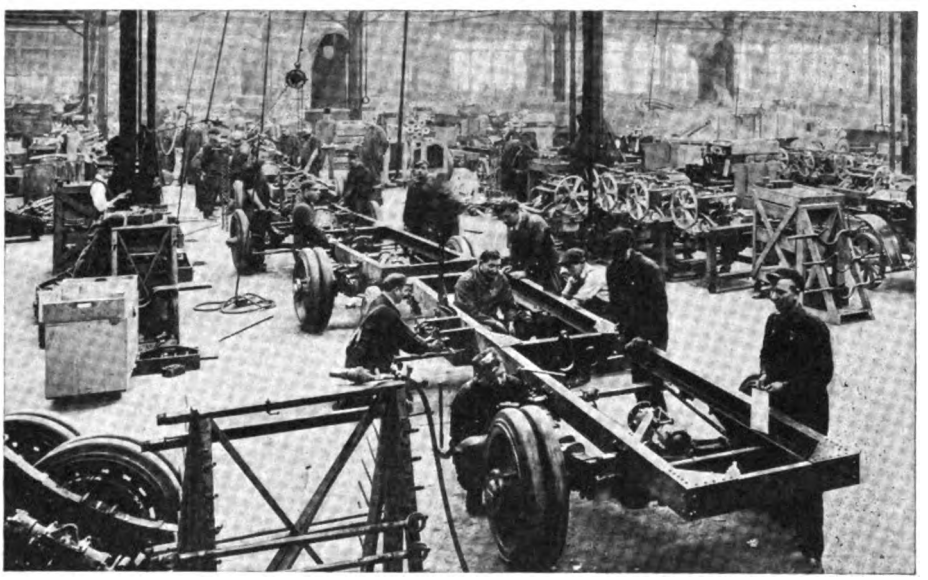


This chart shows the ratio of inexperienced and skilled workers of two decades ago as compared with to-day in Detroit

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Locating ills in motors by stethoscope



Teaching practical adjustment, inspection and repair operations

cording to their ability so that the pupils quick to learn are not retarded by others of lesser perception.

To be accepted in the school a prospective student must prove standard qualifications in experience and past record as, for example, a 3 months' course for service managership in a service department would demand a man with mechanical engineering plus Packard experience, or a service man or mechanic with 3 or more years of experience on Packard cars and trucks including 1 or more years of service work who would have the recommendation of a Packard dealer or Packard technical service manager.

The 6 months' course to become a service manager, assistant manager or foreman requires individuals as follows:

Mechanical experience plus considerable business experience.

Mechanical engineer with automobile experience.

Mechanic with 2 or more years on Packard products plus machine shop experience, who would be recommended by a Packard dealer or technical service manager.

The 1 year course to become a service foreman demands:

Mechanical engineers.

Mechanics who have had 1 or more years of Packard experience.

Factory experience; applicant must come well recommended.

The following 1-year course gives an idea of the scope of the school:

General machine shop, 9 weeks	Drill press Milling machine Engine lathe Bench work
Assembly and parts repair .....10 weeks	Steering Rear axle Clutch Transmissions Carbureters Cylinders and pistons Small parts
Sheet metal..... 1 week	Radiators and Fenders
Truck factory.. 7 weeks	Motor assembly Block test Dynamometer Clutch and transmission Steering
Car factory ....12 weeks	Chassis assembly Final repair and tuning carbureter
Main factory .. 3 weeks	Electrical Small parts Carbureters
Service dept. .. 6 weeks	Motors Repair, cars Repair, trucks Electrical
Operating dept. 4 weeks	Inspection cars and trucks Testing cars and trucks

Lectures are given by officials of the Packard company and by various authorities elsewhere in the industry.

Packard Holds Service Contest

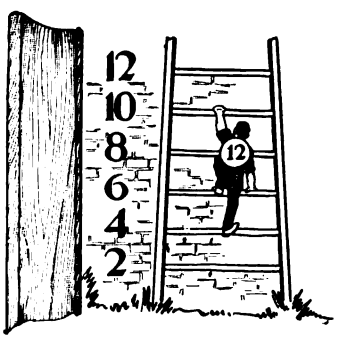
Advancement Depends on Bettering Service in Each Station

TO show up the true function of service in motor car merchandising, the technical service department of the Packard Motor Car Co. is now conducting a service contest of all its service stations—because it realizes that efficient service creates confidence and promotes sales.

The first step in staging the contest was taken by holding a convention of all Packard technical service men at the Packard factory Oct. 4, 5 and 6. Here service problems were discussed and methods of improving present service facilities at a minimum expense were taken up. The rules of the contest were discussed and the service men were primed for the six months' contest.

In order that the contest might be equalized for all dealers, a classification into five groups was necessary. This classification is based on the relative service merit of each station, regardless of the size of the establishment, in accordance with the following schedule:

Class A—Excellent—90 to 100 per cent perfect.
Class B—Good—80 to 90 per cent perfect.
Class C—Fair—65 to 80 per cent perfect.
Class D—Poor—50 to 65 per cent perfect.
Class E—Very poor—0 to 50 per cent perfect.



A board with numbered cardboard figures climbing to the top of a ladder indicates the progress made by each group

Each contestant remains in the group in which he starts, and receives merits in proportion to the amount he benefits his service work in the period of the contest. And he can benefit his service work in any one or all three of the repairshop departments—either the administration, actual repair or stock department. Every member of each organization can credit or demerit his station by creditable or poor work. *The basis of advancement depends upon how much each betters the service given in his station.*

A graphical record of the stations is kept in the factory on an efficiency contest board. This board is provided with five ladders, one for each group, and the stations are represented by numbered men climbing to the top. On this the status of each dealer is shown, and the progress each has made towards perfection may be seen at a glance. The standings are changed weekly by the technical service department, and a facsimile of the board is sent to each dealer, showing the progress of the contest.

It is expected that the spirit of friendly competition caused by this contest will do much to improve service conditions throughout the country.

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Queries Answered

WE SHALL BE GLAD TO FURNISH INFORMATION to anyone free of charge, but be careful to give all the facts. Inquiries are answered by mail whether they are published or not, so do not fail to enclose a stamp and your correct name and address.

Why Retarded Spark Overheats Engine

Answering Charles W. Mann Motor Co., Norristown, Pa.

When the spark is retarded combustion starts after the piston has begun the power stroke, consequently the further the spark is retarded the more power is lost. When the spark is advanced so that explosion occurs at dead center, the gases immediately start to cool off due to their expansion as the piston moves down on its stroke and also due to radiation to the cylinder walls, so that by the time the piston is half or two-thirds of the way down the gases are not nearly as hot as they were, because the heat has been used in driving the pistons down and absorbed by the water jackets. However, if the spark occurs after the piston is started on its stroke, the gas may not be fully burned until the piston is nearly to the bottom, in which case the whole cylinder surface is exposed to the intense heat of the explosion.

This is not all, however. When the engine is operated with a retarded spark the throttle must be opened wider than when the engine is running with spark advanced. In other words, more mixture must be taken into the cylinders. This mixture is burned and produces more heat. It is very easily possible to double the amount of mixture consumed in this way. With the spark advanced a certain amount of fuel might be consumed, and with the spark retarded twice this quantity of mixture might be burned, yet there would be no other changes. The speed of the car would remain the same and the cooling effect would be the same. Therefore, the cooling system under these circumstances is called upon to carry away twice as much heat. This condition, coupled with the one previously mentioned, namely, that the combustion surface is more exposed to the flame than usually by the retard of the spark, produces overheating.

How to Get the Money

Editor Motor World: We run a Ford service station on a cash basis. All cars have C. O. D. tickets put on them, and an itemized ticket for each amount is filed in a National credit register. When the car goes out the ticket is taken out and the amount rung up, but it frequently happens that the car gets out without the C. O. D. ticket being paid. —W. H. McGlamery, McGlamery-Sutton Auto Co., Greensboro, N. C.

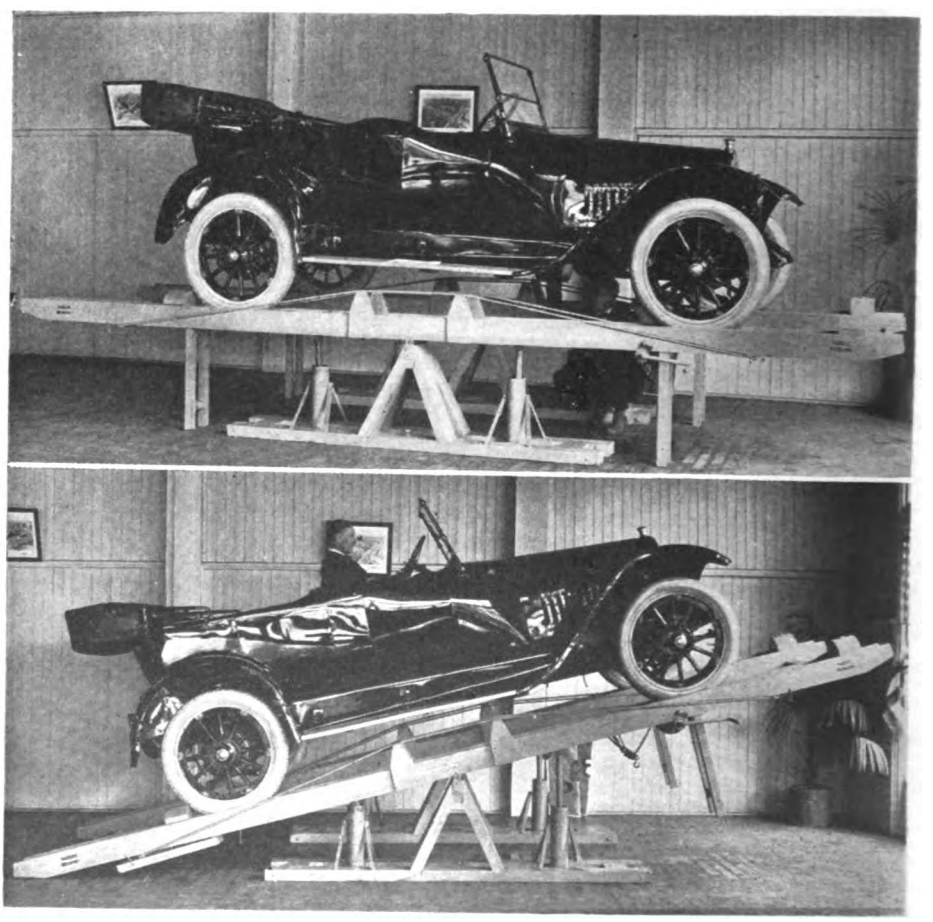
Answer—There is a concern in New York handling about sixty jobs per day which uses the following method to prevent cars getting out without payment of the bill.

One man in the shop is designated as traffic manager, and it is his duty to meet all cars coming in and to watch all cars that go out. He must not permit a car to leave without receiving a Release Ticket from the owner, which the latter obtains from the cashier. If he should ever let an owner get away, he would be held responsible for the bill.

When the owner pays his bill, he is given a Release Ticket. The receipted bill itself is not a desirable form of release because it does not protect the traffic manager. If he has a Release Ticket to show for every car that goes out, then there can be no question that he has done his duty, but if he simply allows the car to pass out when the owner presents the receipted bill, it might not be so easy to prove.

How to Set Spark on Dodge Bros. Car

Set the distributer head in a fully retarded position. Open all priming cups, place thumb over cup on No. 1 cylinder and crank engine by hand until the compression begins to be felt. Continue to turn slowly until No. 8 valve is just closed at which position the valve lifter (with a clearance of .003 to .004 in.) may be turned with the fingers. Remove the distributer head and rotor, then loosen the breaker cam screw on top of the vertical shaft. Set the breaker cam by turning in a counter clockwise direction so that the rotor button will come under the terminal for No. 1 cylinder when the distributer head is replaced and that also the timing contacts are just starting to open. Tighten the adjusting screw in the vertical shaft, and see if the base of the distributer is in proper alignment with the water pump shaft. Be sure to replace the paper shims under the distributer and water pump bracket if they have been removed.



Hydraulically Operated Repair Stand

This lift was designed by a man in Portland, Ore., for repairshop work. The car is drawn up on the incline and then it is brought to a horizontal position. It is 18 ft. long and operated by hydraulic cylinders which are clearly shown

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THE LAW

As It Applies to Dealers, Garagemen, Repairmen

The editor of this department is glad to answer questions. In sending queries, always include copies of contracts, notes, etc., to which you refer

By George F. Kaiser

Investigate *First*

Editor Motor World: Can anything be done with the ——— Battery Co., Chicago, without a civil suit. The amount at stake is too small to make that worth while.

They solicited our battery business and we gave them an order for a sample battery. We became a trifle suspicious when we found that they shipped C. O. D. Upon receipt and examination of the battery we found that it was completely discharged and that it would not hold electrolyte. They guaranteed before shipment that their goods would be satisfactory or money would be refunded.

After considerable letter writing and bickering back and forth, they consented to let us return this battery for replacement. They sent another and it was in exactly the same condition, except that when we put electrolyte into it it could not be charged. The temperature of the battery ran to over 100 deg. before the charge reached 1200 specific gravity.

Letters of complaint were useless. Our representative happened to be in Chicago and called on them and they lied about it, stating they had written us fully the day before. On the contrary, postmark on their letter shows that they dictated the letter 2 days before they wrote it, or 1 day before our representative called, and the postmark on the envelope shows that they mailed it the day after our representative called.

As the matter now stands, we have two of their defective batteries for which we paid $8, and about $2.50 additional express.

We can do nothing with these people. As above stated the amount is too small to sue for.—W. S. Farrant & Sons, Grand Rapids, Mich.

Answer—You are correct when you say the amount at stake is too small to make a civil suit worth while. Unfortunately it seems that that would be about the only remedy you would have under the circumstances. Transactions of this kind are constantly going on and the only thing that the injured party seems able to do is to charge his loss up to experience.

Can Install Pits

Editor Motor World: In building a public garage in accordance with laws of the State of Ohio can the owner install one or more pits for convenience in repairing cars?—C. D. McConkey, Cuyahoga Falls, Ohio.

Answer—There is no state law governing the installation of pits in a garage in Ohio so far as I know. If you apply to your local fire department you should be able to find out if there is any objection to such pits, and if so just what the objection is.

Who Is Responsible ?

Editor Motor World: Will you kindly advise us who would be responsible for damage done to a car standing in a public garage on which the owner pays rental and no one seems to know how or by whom the damage was done?—Commercial Equipment Corp., Milwaukee, Wis.

Answer—It is quite possible that a garageman might be held responsible in a case of this kind even though he is only bound to use ordinary care to keep the property left in his charge safe from injury.

If the party owning the car brought suit he would only have to prove that when he put the car in the garageman's charge it was in perfect condition and that when he received it back it was damaged.

It would then be the duty of the garageman to say that the accident occurred through no fault of his own.

Of course, if the garageman knew nothing about how, when or by whom the damage was done, he could not put in a very good defense.

Each case of this kind depends on its own particular facts and it is impossible to say that a garageman is liable or is not liable without knowing every little incident connected with the damage. Even then sometimes in the case of a law suit, a jury does the unexpected and brings in a verdict for the wrong party.

Contract Rescinded

A good sample of a valid agreement to rescind a contract is given in a recent New York case.

Suit was started by the buyer of an automobile to get back the money he had paid for a motor truck under a written contract. The contract provided that the chassis of the truck was to be delivered immediately and the body of the truck was to be delivered within 3 weeks of the making of the agreement.

It appeared that the chassis was delivered with a temporary body on it and that after waiting for about 4 months for the permanent body, he called at the dealer's place of business with his lawyer and complained about the non-delivery. The lawyer testified that he had the following conversation with the manager at that meeting, and that he said: "Mr. — is dissatisfied and now offers to return the truck and call the whole deal off, and rescind the contract."

The manager replied: "Put it in the garage. That is all you have to do." The court decided that the foregoing conversation was enough to bring the contract to an end and that the buyer was entitled to get his money back.—Stella vs. Lincoln, 166 N. Y. S. 763.

Landlord at Fault

An interesting decision has just been handed down by a New York court to the effect that if a landlord has agreed to make repairs, a garageman can make them if the landlord fails to do so and deduct the amount so spent from the rent.

The landlord started a court action to get back possession of a building which he had rented to a garageman. The lease contained the following clause:

"The premises are to be used as a garage. The landlord agrees at her own expense to make the following repairs; i. e.: To concrete all floors in the building, excepting the top floor, which, however, will be concreted at any time by the landlord when required to do so by the tenant; to fireproof window glass of windows on the easterly side wall to and above adjoining easterly building; to remove the woodwork around flue at front on second floor; to remove rubbish from front areaway and floors; to drop curb at both entrances; to repair metal ceilings on the fifth and sixth floors, repair cracks in concrete on first floor, put in drain for washstand purposes on the southeast end of second or third floor, and remove wooden partitions on upper floors, and make such other repairs as may be required by city, municipal, or state authorities to permit the building to be used as a garage."

The garageman counterclaimed for $322.05 he had spent for repairs and for $250 damages to his business. The court decided that as there was a covenant on the part of the landlord to keep the building in repair and as he had failed to do so, the garageman was justified in making the repairs and charging them up to the landlord.

The $250 claimed as damages to the garageman's business was disallowed, however, because it was not shown to be proper damage. Although there was $541.60 due as rent, the landlord was only allowed $219.61, the garageman being allowed $322.05 for the repairs made by him. 166 New York Supplement, page 414.

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Editorial Observation

Liberty Bonds

An editorial by Commissioner William M. Webster of the National Association of Automobile Accessory Jobbers. It was sent to all members of the association Oct. 20 as Bulletin No. 335 and is reproduced here as an admirable example of how all business should feel and act in this hour of our country's necessity.

My Country, 'tis of thee,
Sweet land of liberty

WE often sing and always rise when we hear these glorious words.

Is there anything we can do now that will more thoroughly and effectually put our thoughts and feelings into practical execution than to have our great army of traveling men employed throughout the United States, by the various members of this association, both manufacturers and jobbers, exert their utmost influence in the next few days in the distribution of Liberty Bonds?

Permit me to say to you, and through you to your men, that they should not be unmindful of the fact that many of their relatives, friends and comrades have enlisted and will not only undergo the hardships of war, but many will, no doubt, sacrifice their sacred lives on the altar of Liberty, that you and I may be untrammeled and free, and those of you who for various reasons are not able to go to the trenches should most willingly and gladly make the sacrifice to uphold the hands of our President and assist him in financing this World's War in the disposition of these Liberty Bonds.

And do not equivocate or hesitate for one moment, as we should ever keep in mind that the babbling brooks of human blood that are flowing down the trenches of Europe to-day sing out their requiem for Liberty.

I hope that every member will so impress his great army of travelers for just a few days, during which lay aside the selling of merchandise and do that for our country that will enable us to operate our plants and sell merchandise under the flag of LIBERTY and free democracy for all times to come. DO YOUR PART AND DO IT NOW—PLEASE.

Respectfully,

WILLIAM M. WEBSTER.

Ten Things to Do
Ten Things Not to Do

HOW did you get to be as good as you are?

How did you make your present job or your present business as good as it is?

The answer is: You did certain things of benefit, and you ceased to do certain things that were not of benefit.

Wherefore, if you want to be better, or want your business to be better, you must continue to do things of benefit and leave off doing things that are a detriment.

Therefore, jot down on a piece of paper, in a notebook, or anywhere, so you won't lose them, a few things as the basis for action. Select ten good things and ten bad things. DO the good things and CUT OUT the bad things.

What good, you say, does it do to set these things down on paper?

Just this: If you make a written record you won't forget them. If you write them only in your mind they are likely to be pushed aside by other things, and some of them will be forgotten entirely. Therefore, WRITE THEM DOWN.

For instance, if you are a salesman, you may be getting down late about every other morning. Set down promptness as one of the benefits. We surely are all agreed that it is a big point in your success.

And if you are running a business, set down taking cash discounts as a benefit. We believe you will agree this is a big benefit to any business.

And then—once in a while get out your list of ten things to do, and not to do, and see how you are getting on. Keep at it until the ten things have become knit into your daily life, until they have become habit. After these have become habit add others. Each time you add a good habit you add to yourself.

Your success is the sum of yourself. You are the sum of your habits.

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What Others Think

THIS page is for the use of MOTOR WORLD readers with something to say. Letters on subjects of interest to dealers, garagemen, repairmen and jobbers are always welcome—especially if they are timely and brief.—THE EDITOR.

Another "Fake Parts" Letter

Editor Motor World: We have read with interest the article, "Fake Parts Causing Trouble," by the Ignition System Manufacturer, printed in the Oct. 3 issue of Motor World, and from a defensive standpoint and in justice to our patrons in the trade we wish to correct several of the absurd statements made.

In the first place, regarding "inferiority of materials used," we wish to challenge this company, or any other ignition instrument manufacturer, to a test of any parts that we manufacture, as we know from experience that the quality of and the material used by us is, in many instances, superior to that of the instrument manufacturer.

We know, for instance, that contact parts furnished by the very manufacturer making this complaint are causing much trouble and dissatisfaction on a well-known car; in fact, we are supplying several branches with our contacts after having them tested, which we believe should be proof enough of the quality of the so-called "fake parts"; in fact, we are enjoying a nice business from motor car manufacturers who, you no doubt appreciate, would not consider our proposition unless thoroughly convinced of the quality of our products.

Prices, too, exacted by instrument manufacturers from car owners have always been exorbitant, for apparently costs were never considered. On the contrary, a selling price was established wholly upon the foundation of avarice. This statement is substantiated by a paragraph taken from a circular letter sent out by the manufacturer making the complaint, as follows:

> "Reduction in price of Atwater Kent type H, H-2 and K-3 contact springs and screws will go into effect October 1, 1917. There will be a cut of 50 per cent from the present list prices.
>
> "All trade discounts remain as before. This reduction is being made in the face of advanced prices of raw materials."

As a whole, the article printed in your paper is not very consistent and fair, and, as stated, we are ready at all times to submit our parts for test, show our cost prices based on using not only the highest grade of tungsten and platinum contacts, but component materials manufactured correctly as well.

We think we can prove also that we can save for ourselves a reasonable amount of profit, based on our selling price. In other words, that absolutely nothing, either in material, construction or workmanship is sacrificed to attain that end.—A. Nelson Mfg. Co., Chicago.

THE SAD TALE OF FARMER JONES

Old Farmer Jones drove into town
To get some tires one day;
He had them placed upon his wheels,
And then he drove away.

"I'll pay yer when I sell my wheat,"
He called in accents shrill;
"And some day when I come to town,
I'll come and pay yer bill."

The Dealer from the Jobber bought
These tires less 5 for cash;
Now he had sold them out on time,
How could he be so rash?

He could not meet the bill when due;
He lost his five per cent;
His credit standing suffered, too,
However well he meant.

The Jobber from the Factory bought
The tires for cash less ten;
But as his Dealer did not pay,
How could he take it then?

And so he lost his ten per cent,
His credit suffered, too,
Because he could not meet the bill,
Nor pay it when 'twas due.

The Factory bought the rubber crude
At twenty off or more,
Relying on the Jobber's check
To settle up the score.

But as the Jobber did not pay,
How could he meet his bill?
And so he lost his discount, too,
It was a bitter pill.

So down the line, to one and all,
The loss came with a crash,
And all because old Farmer Jones
Got tires without the cash.

Credit's like an ocean wave,
That ever laps the shore,
When e'er one wave is broken up,
It breaks up thousands more.

Credit is an endless chain,
Each link a part must bear;
But when one link is bent or cracked,
The strain the others share.

If every man would pay his bills
As soon as they came due,
The business man's millennium
Would be a dream come true.

—J. N. Greene.

When Old Man Schultz Saw the Light

THE following is extracted bodily from the "Quality Dealer," which is a house organ published by the Lathan Auto Supply Co., San Francisco:

Does Winter Business Pay?

Evidently it does, because even old conservative Schultz, of the Lonely Hollow Garage, is a convert.

Read how it was done and how our Salesman convinced him that it pays to go after winter business—as told by the salesman himself.

"Reilly, I don't know what has happened to all the trade this year. You know I started out on this last trip with a good idea that nothing was doing and I might as well keep the old chair warm on the other side of your desk; but no sooner had I hit the road than things began to hum.

"I asked two or three of the trade what was loose, but they only smiled and said something about MOTOR WORLD and keeping busy, and in two or three places I noticed the windows were washed up and some of our Accessories out on view. It really was at Old Man Schultz's that I found out all about the Big Move.

"As I drove into the old boy's place, he greeted me with the usual frown, glanced at his safe, walked over and slammed it shut—he had just bid one of my competitors a rather brusk 'Good Py'—then he turned on me: 'Vell, here's anotter of dem d—— drummers. Vat you want, hey? Nottin' doings till next Spring. Vooden't puy a ting; you schust vaist your time.'

"Lord, I felt like the deuce, in a busted flush; but I kidded him along a while and at last he warmed up. Seems like his competitors, the Lonesome Hollow Motor Co., are live and wide-awake boys, and first of all that Winter business stuff in the MOTOR WORLD wasn't getting by them. They were all dolled up that day with windows washed and a nice display of Spot Lamps, Flashlights, and a lot of winter sellers, and business was coming their way already.

"That explained the Old Man's grouch—that was the sticker—Old Man Schultz didn't want anybody else to be busy if he couldn't be.

"Then I lit on him—and I lit hard—for ten minutes I told him things that I expected any minute of the ten he would come back with a 'fist full of fives' and clean me, but he took it—and gradually the great light dawned on him, and he saw the truth.

"'Py, golly,' he shouted, 'if dem odder poys can do it, I can. Let's get some of dem tings.'

"We sat down and made up a nice little order of good winter stuff and I got up a little series of circulars to be mailed out by Katie, his daughter.

"I'll bet the Old Man will make a cleaning this winter, 'cause he is sure enthusiastic and that's all that's needed to get the business."

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The RETAIL NEWS

SOUTH

Jenkins Cab & Auto Co., Birmingham, Ala., is occupying new quarters designed and built for its use on Fifth Avenue just west of the Southern Club. The company will maintain its own repair and paint shop.

J. C. Lewis Motor Co., Savannah, Ford agent in this territory, has moved into its new building at the corner of Oglethorpe Avenue and Barnard Street. The building is one of the best and most completely furnished garages in this section.

Smith Auto Supply Co., Savannah, has moved into new quarters at the corner of State and Barnard Streets. This company conducts a line of jitneys and caters to the jitney trade.

Federal Tire Co. has succeeded the Federal Tire & Repair Co., located at Eleventh Avenue and Broadway, Nashville, Tenn. Harry J. Connor and Dan E. Power are the new owners. It will be under the management of J. E. Drake and George C. Loeffler, automobile tire men of many years' experience. The Federal Tire Co. will handle Federal tires exclusively.

New Garages

Louis E. Wisdon.....Gainesville, Ga.
J. F. Grantham Motor Co.....Savannah
L. G. Hurtbutt.....Clarksdale, Miss.
Hallman & Co. (40 x 100).....Dothan, Ala.
Metter Auto Co. (addition).....Metter, Ga.
Valdosta Grocery Co.....Valdosta, Ga.
Hermitage Auto Co.....Nashville, Tenn.
Georgia Motor Co. (80 x 100)..Albany, Ga.

EAST

Pioneer Taxicab Co., Hartford, Conn., conducted by the Britton Co., is to be wound up and the cars sold. The company will devote all its attention to Federal trucks and Stearns-Knight and Jeffery passenger cars. The concern was one of the first to conduct a livery business in Hartford using motors.

Babcock Sales Co. branch at 1067 Main Street, Buffalo, N. Y., was opened last week. F. A. Babcock, Jr., is in charge. The company also handles the Owen Magnetic. A garage service is conducted at 40 West Utica Street.

W. J. W. Hance, Wilmington, Del., who has been in the automobile business here for some time, has formed the Hance Motor Truck Co., which has taken the agency for the Broadway truck, and will conduct a general garage business at 702 West Fifth Street, where plans have been made to greatly enlarge the present plant.

French Street Garage, of which Arthur Johnson is the head, and which is located at Third and French Streets, Wilmington, Del., has acquired the adjoining property, which will be added to the plant. The company carries Ford parts and Fisk and Diamond tires, as well as the Reo car.

Pitt Servus Co., Inc., has opened a sales and service station at 3803 Grant Boulevard, Pittsburgh, where it will deal in Mason tires and tubes. Frank A. Pfiefer is president, Joseph A. O'Brien is vice-president and salesmanager, and Charles W. Dennison is secretary and general manager.

The Sweeten-Wilmington Co., at 1011 Orange Street, Wilmington, Del., which handles the Franklin and Hupmobile, in addition to enlargements, is having new floors laid, the ceilings and walls redecorated and a suite of offices arranged.

Wilmington Automobile Co., Wilmington, Del., which handles the Buick and a number of other cars, having purchased the Avenue Theater, adjoining its property on Tenth Street at the junction with Delaware Avenus, purposes adding the latter building, which is now fire wrecked, to the plant. Incidentally 20 ft. are being taken from the company's building on Eleventh Street for the widening of the latter thoroughfare by the city. The company recently purchased a dwelling on Orange Street, which has been torn down, making a new driveway and entrance to the garage, which is now reached from all four streets surrounding the block.

Taylor Motor Sales Co., of which F. C. Taylor is president, has purchased the Motor Car Repair Co., at Fifth and Orange Streets, Wilmington, Del., and has taken the Delaware agency for the Haynes car.

MIDDLE WEST

Frank Asplund and Gust Larson, Ashland, Wis., have formed a partnership under the name of Asplund & Larson to deal in Olympian cars, and will erect a new garage, 500 x 100, on Third Street, near Eighth Avenue, West.

Knorr & Rausch, Granton, Wis., have been appointed Ford dealers for Clark County and will open headquarters in Neillsville, the county seat. The firm will erect a new garage and service building, costing about $8,000.

Schmidt Bros., North Freedom, Wis., have disposed of their garage business and Ford dealership to A. H. Voeck of that city.

Tomah Motor Co., Tomah, Wis., Ford dealer, has leased the Polifka Building and will convert it into a garage and service station.

Stolte, Dangel & Foss Co., Reedsburg, Wis., which has been dealing in motor cars, tractors and farm machinery in addition to conducting the largest department store in that city, has announced its intention to retire from business on March 1, 1918. The entire stock will be disposed of in the interim.

Rodney Grover, implement dealer, and Frank Dix, merchant, Junction City, Wis., have formed a partnership under the name of Grover-Dix Auto & Implement Co. and will act as Chevrolet and Oldsmobile dealers, in addition to representing the Emerson-Brantingham and John Deere farm implement lines and Fairbanks-Morse engines. The Dix store is being remodeled into a garage, service station and warehouse.

William Roebke, Cedarburg, Wis., has been appointed local dealer in Nash cars and trucks.

Andereck Bros., Juda, Wis., have dissolved, J. O. Andereck retiring and taking over all accounts.

A. A. Welsh, Bloomington, Wis., Ford dealer, has disposed of his flour and feed milling plant in order to devote his entire attention to the motor car business. The present garage will be razed and a modern building, 50 x 60, erected in its place.

George W. Franklin Co., Detroit, has opened for business at 936 East Jefferson Street.

Frank Fehlinger and Charles Prepelitza, Milwaukee, Wis., have opened a new garage and repairshop at 439 Prospect Avenue, under the name of Avenue Garage.

Dennis Hopkins, Three Rivers, Mich., who will soon go to Battle Creek as a member of the National Army, will leave the Oakland agency, which he has conducted for some time, in the hands of his father, W. F. Hopkins, while Burt McElroy will take charge of the Oakland service station. The sales rooms will remain at the old location.

Desormeau & Norton Garage, Saulte Ste. Marie, Mich., a partnership recently formed by A. Desormeau and H. Norton, will open temporary quarters on Walnut Street, where they will specialize on Ford repairing and will also carry a complete stock of accessories and supplies.

Miller Auto Sales Co., Jackson, Mich., has purchased the garage formerly occupied by the Willis Auto Co. at 219-23 N. Jackson Street and has completed alterations and moved to the new location, where in addition to carrying the Saxon, King and Elgin cars, the company will operate a public garage, with day and night service, and will carry a complete line of accessories.

Charles Trumble, Brown City, Mich., of Tether & Trumble, has purchased the interest of R. I. Hether in the garage and automobile business. Mr. Trumble has secured the Ford agency for this territory and will conduct the garage and Ford sales and service as formerly.

Warner's Garage, Chassell, Mich., representatives of the Hudson, will open a salesroom in Laurium by Nov. 1. The salesroom will be temporary, however, and will give way to a modern garage establishment as soon as a suitable location is secured.

William Reed and A. E. Detwiler, Oxford, Mich., will build a garage with a floor space of 5900 sq. ft. Besides the general automobile business the company will be equipped to look after the needs of tractors and trucks.

Elmer A. Jones Auto Co., Caro, Mich., is the successor to the firm of Jones & Humm. In addition to the Dodge car the company will handle Paige.

Holleman & DeWeerd, who have conducted a garage in Byron Center for several years, have purchased the Henry De Kruif Garage in Zeeland, Mich.

Bemb-Robinson Co., Detroit, distributer of Hudson cars, has taken a 10-year lease on the two-story steel and brick building comprising about 15,000 sq. ft., located at 141-145 East Larned Street. The building is to be remodeled into a modern fireproof garage. E. J. Bemb will operate it as a service station and paintshop for special body trimming.

Harley R. Fee, Flint, Mich., has opened a new accessory and supply store at 1119 Kearsley Street.

Boomhower Auto Supply Co., Battle Creek, Mich., has opened its new store in the Post Tavern Garage.

Elmer G. Carey and Owen Carey, doing business under the name of the Carey Auto Co., Harbor Springs, Mich., have dissolved partnership.

Gray Motor Co., Detroit, has opened for business.

Non Such Tire Repair Co., 97 Wayne Street, Detroit, has opened for business.

Miller & Sitner Garage, 1117 Junction Avenue, Detroit, has opened for business.

Auto Sales Co., Lansing, Mich., has changed hands, L. A. Boyd and L. S. Briggs having purchased the company from L. A. Judd. The new proprietors will handle the same line of cars, the Regal and Marion-Handley passenger cars and the Vim and Olympian trucks.

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O. C. Edgerton and H. A. Summers have opened a new shop at 124 Liberty Street, Detroit, for recharging, repairing and carling for all makes of storage batteries. The managers have secured the agency for Jackson County for the Exide storage battery.

Earl W. McGookin, 1231 Woodward Avenue, Detroit, has completed his wire wheel service station.

Artin Tire Repair Co., 227 Grand River Avenue, Detroit, has opened for business.

Besser's Cycle Shop, 428-30 Oakland Avenue, Detroit, has opened for business and will carry a stock of automobile supplies.

New Garages

A. J. Lashmett (40 x 180).....Rushville, Ill.
Knorr & Rausch (50 x 100)..Neillsville, Wis.
F. A. Whiting (addition).....Berlin, Wis.
G. C. Hayes, Ford dealer (44 x 110), Brodhead, Wis.
DeForest Lumber Co., Ford.....Lodi, Wis.
DeForest Lumber Co., Ford..DeForest, Wis.
Chester Dahl, Ford (80 x 120)....Racine, Wis.
P. H. Slattery, Ford (45 x 100)....Adell, Wis.
Charles Selk, Jr.....Manitowoc, Wis.
Appleton Overland Co. (addition) Appleton, Wis.
J. W. Munger.....Charlotte, Mich.
Nick Glasser .....Braddock, Pa.
J. W. Slater Garage....Traverse City, Mich.
Sterling Dusseau .....Monroe, Mich.
E. B. Thurston ($5,000).....Conklin, Mich.
Hurlett & Day Garage.....Belleville, Mich.
Churchill Bros. .....Romulus, Mich.
Julius Schiller ($1,250) .....Toledo
D. M. Kable ($50,000).....Toledo
Fidler & Gales (49 x 95, $7,500).....Detroit
Fred W. Mott.....Bloomington, Ill.
W. E. Ludwick.....Moline, Ill.
Patterson Bros. .....Galesburg, Ill.
C. F. Stout.....Fairview, Ill.
Albert Paul .....Carlinville, Ill.
Commonwealth Garage Co.....Decatur, Ill.
A. J. Lashmet.....Rushville, Ill.
Pierce & Caldwell.....Decatur, Ill.
F. W. Stebbins and C. W. Westpinter, (184 x 84, $25,000), Hastings, Mich.
Scott & Tolan.....Benton Harbor, Mich.
Jacob Kovinsky .....Pontiac, Mich.
Turner & Crimmins.....Big Rapids, Mich.
A. Henderson .....Grand Rapids, Mich.
Goodspeed Real Estate Co....Grand Rapids
William Beebe (45 x 66 x 12, $4,000).Detroit
M. Lochard ($1.500) .....Toledo
Grant-Demno Sales Co.....Cleveland
Howe-Miller Co.....Columbus
Albert Paul.....Carlinville, Ill.
Patterson Bros. (75 x 150, $50,000), Galesburg, Ill.
Commonwealth Garage ($75,000).Decatur, Ill.
Pieree & Caldwell (50 x 150, $8,000), Decatur, Ill.

PACIFIC COAST

Power Rubber Co., San Francisco, has opened a branch at 2750 Broadway, Oakland, with Mullins & Costello as selling representatives.

Paul Hoots has purchased the accessory and tire store at 2285 Broadway, Oakland, Cal.

Cook & Rancel have leased the corner of Twenty-first Street and Broadway, Oakland, Cal., and besides installing a complete vulcanizing plant will carry United States and Tyrian tires.

U. S. Vulcanizer Mfg. Co., manufacturer of steam vulcanizing equipment, has opened a vulcanizing store at 276 Golden Gate Avenue, San Francisco.

Richard E. Mittelstaedt has purchased a half interest in the California Tire & Rubber Co., San Francisco.

Smith Garage, 819-825 Ellis Street, San Francisco, has been purchased by A. B. Barkman. N. B. Clarke will act as manager.

D. & M. Tire Agency, Tacoma, Wash., has opened a Mohawk tire salesroom at 750 Broadway. E. M. Rusk is the proprietor.

Farnham Bros. Motor Car Co., Spokane, Wash., has leased the new garage at W. 1312 First Avenue, formerly occupied by the Snyder Motor Car Co.

Niles A. Searls has purchased the Roedehaver Garage, Berkeley. Roedehaver continues with the firm as sales manager for the Chevrolet and Oldsmobile.

Osen-Hunter Auto Co., Oakland, Cal., has purchased the business of Freming & Browning. The latter will be conducted as a branch salesroom for the National, Hupmobile and the Kleiber Truck.

A. C. Hodgkins has purchased a half interest in Tully's Garage, 4506 East Fourteenth Street, Oakland, Cal.

E. C. Stuart has removed his tire shop and vulcanizing plant to 3310 Broadway, Oakland, Cal., and will distribute the Mohawk and Goodyear lines.

E. A. Shouse and W. C. Hill have opened a used car salesroom in Oakland, Cal.

The Auto Battery Co. has moved to the new building at 3044 Broadway, Oakland, Cal. J. L. D. Keppy, manager of the company, was formerly in charge of the Alameda County branch of the Willard Storage Battery Co.

C. B. Smith has become sole owner of the Upper Fruitvale Garage, Oakland, by purchasing the interest of J. L. Cassaretto.

Central Alameda Garage, Alameda, Cal., has secured a distributing agency for the Prest-O-Lite.

J. A. Baugh has sold a half interest in the Perfection Vulcanizing Works, Alameda, Cal., to L. W. Camper.

Morton & Beer, San Mateo, Cal., have disposed of the San Mateo Garage and erected a new Ford sales and service building.

New Garages

Liberty Garage.....San Francisco
Oehm Garage (addition).....San Francisco
Griffith Motor Car Co. (50 x 120), Tacoma, Wash.
The Dalles Garage Co. ($25,000), The Dalles, Ore.
William Dolph (50 x 107).Castle Rock, Wash.

NORTHWEST

Cawthra & Vandruff, Holbrook, Neb., have sold their garage to Frost & Currie.

Dwyer & Platts, Huron, S. D., have bought the Rachler Garage and changed the firm name to the Platts Auto Co.

Fred Gillispie, New Market, Iowa, has bought the Manford Adams livery barn, which will be remodeled into a garage.

N. G. Nelson, Curtis, Neb., has bought an interest in the Service Garage.

E. H. Maryott, Hooper, Neb., has bought the repairshop of the Monnich Garage.

Fred Coker, Shelby, Iowa, has bought the garage of Joseph Tate.

Austin Bros., Lake Andes, S. D., have leased the Byrne Garage.

Frank Kelso and Alfred Holt, Beatrice, Neb., have opened a repairshop.

George Mick, Havelock, Neb., has bought the O Street Garage of H. C. Vannoy.

J. B. Menuey, Newport, Neb., has bought the auto accessories stock of Henry Keller.

Homer Phillips, Surprise, Neb., has bought an interest in the Aden Garage, Shelby, Neb.

Herman Martin, Fontenelle, Neb., has leased the garage and bought the stock of F. J. Burg.

A. M. Jacobson, Shannon City, Iowa, has bought the garage of C. G. Garvin, Menlo, Iowa.

Ray Garst, Hamburg, Iowa, has bought the interest of his partner, George Grape, in the Garst & Grape Garage.

Ray Grosse, Thurman, Iowa, has bought the Thurman Garage.

R. O. Blair, Dallas, S. D., has bought the Brown & Sym Garage.

Blain Garage and the Blain Auto Co., Redfield, S. D., have been consolidated under the firm name of Blain Auto Co. T. P. Blain becomes sole owner, buying out Oscar Blain.

F. F. Rogers, Minden, Neb., has bought the Upland Garage.

A. H. Krauss, Beatrice, Neb., has sold his garage to Buchanan & Brown.

R. R. Monthei, Grand Junction, Iowa, has bought the interest of Kinsey Brothers in the Dana Garage.

Homer Gittings and Audley Sullivan, McCook, Neb., have opened an automobile supply store.

Nispel & Metcalf, Plymouth, Neb., have bought the Weichel Garage of H. Thiessen.

S. C. Pedersen and Chris Larsen, Kimballton, Iowa, have bought the interest of John Esbeck in the River-to-River Garage.

Roy Butler, Juniata, Neb., has closed out his automobile business and retired from the field.

R. Staple, Friend, Neb., has bought the garage of Roush & Son.

Arthur Parriott, Ragan, Neb., has bought the Funk Garage.

Guy L. Strickland, Wayne, Neb., has bought the interest of C. L. Puffett in the Central Garage.

E. L. Richards, Malvern, Iowa, has bought the interest of W. H. Crouse in the Hastings-Overland Garage.

Edward Spencer, Randolph, Wyo., has bought a half interest in the Transcontinental Garage at Evanston, Wyo.

Merle Rowan, Peru, Neb., has bought the repairshop of E. P. Casey.

Oscar Tregar, Bertrand, Neb., has leased the W. J. Wilson Garage for a year.

Held Bros., Columbus, Neb., have leased the garage of Jsnieck & Son.

Jess Beckwith, Germanville, Neb., has bought the White Garage.

Brenner & Buol, Randolph, Neb., have dissolved partnership, Buol taking over the interest of his partner in the garage and conducting it alone.

Eliza Bicknell and Carl L. Jones, Tecumseh, Neb., have bought the West Clay Street Garage of Anderson & Co.

A. S. Phelps, Woodruff, Neb., has bought the garage of J. A. McCann.

Kemmerer Hardware Co., Kemmerer, Wyo., has bought the Up-to-Date Garage of John Walters.

George Gullickson, Watford City, S. D., bought the Frank Gorlion interest in the Watford Garage.

William Zimmerman, Noonan, N. D., sold his interest in the Noonan Garage to A. O. Howe, Tagus, N. D.

Harley Jones, Ryder, N. D., bought the Fredeen Garage.

T. S. Bronken, Circle, Mont., leased the Bauer garage and shop.

Howell Motor Co., Powers Lake, N. D., bought the Holmen, Monson & Oksness automobile business.

L. Schulstad & Son, Harry Schulstad, Reynolds, N. D., bought the Schattoefer building and will equip as a garage.

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Kelly-Springfield Tire Co., Aberdeen, S. D., managed by M. H. Bantz, has opened salesrooms at 516 S. Main Street, where it will carry a stock of tires and accessories.

Kergis Auto Co., Perry, Iowa, has purchased the Service Vulcanizing Co.

J. V. Gilmore Garage at Grundy Center, Iowa, was damaged by fire this week.

Crary Motor Co., Boone, Iowa, has taken over the Carswell-Hammond Auto Co. Building on Sixth Street.

Perry Vertz, Lovilia, Iowa, has sold his garage to C. C. Kitterman.

C. R. Miller, Panora, Iowa, has opened a second garage there.

J. E. Thomas, Mediapolis, Iowa, who was drafted, has sold his garage to George S. Jepson.

Charles Shroyer, New Sharon, Iowa, has traded for the O. R. Phelps Garage.

Eugene Wilson, Winterset, Iowa, has bought the interest of D. W. Orris in the Orris & Gentry Garage.

Joseph Weidinger, West Bend, Iowa, has bought the interest of his partner, H. A. Sloan.

Geisinger Auto & Vulcanizing Co., Storm Lake, Iowa, succeeds the Storm Lake Vulcanizing Co.

Willard Storage Battery Co. has opened a service station at Storm Lake, Iowa.

John R. Grey, Auburn, Iowa, has sold his garage stock to Robert Garnatz.

Harry Bardo, West Liberty, Iowa, has sold his garage to Ingraham Bros.

New Garages

Crum Auto Co.....Monroe, Iowa
New Sharon-Overland Co..New Sharon, Iowa
Walton Auto Co.....Oskaloosa, Iowa
Rudolph Trendell .....Stockton, Iowa
Hertlieb Bros.....Council Bluffs, Iowa
Patterson and Campbell....West Side, Iowa
Bartholomew Bros.....Keokuk, Iowa
Mahler & Son.....Bagley, Iowa
Hagge & Claussen.....Ogden, Iowa
Fay Graham.....Stuart, Iowa
Madrid Auto Co. (addition)....Madrid, Iowa
J. G. Wandell ($10,000).....St. Paul
Roy Christopherson (addition).
Big Lake, Minn.
E. Woodbury (addition).....Barnum, Minn.
People's Auto Co. (50 x 125).
Red Lake Falls, Minn.
Keim & Kiesz (50 x 80).....Eureka, S. D.
Alphonse Erdel.....Fargo, N. D.
Hahns-Johns Motor Co. (44 x 88).
Sioux Falls

SOUTHWEST

W. T. Porter & Son, McPherson, Kan., have bought the Talbot Motor Co. garage.

Harry Gabbert, Troy, Kan., has repurchased the garage he recently sold to G. L. Rugg.

Lyman McCormick and Calvin Davidson, [illegible] Center, Kan., have bought the Being & W[illegible] Garage.

J. T. Ne[illegible]eby, Liberal, Kan., has bought a half interest in the Edison Garage.

Clifton Garage, Clifton, Kan., is undergoing extensive remodeling.

Olathe Auto Co. Garage, Olathe, Kan., is building an extension to house a machine-shop.

Midland Garage, Beloit, Kan., is being remodeled and enlarged.

John Kauffman, Nebraska City, Neb., has bought the interest of Harry McGregor in the Courtland Garage, Courtland, Kan.

Norfleet & Ream, Butler, Mo., have bought the Berkebile Garage at Adrian, Mo.

William Bender, Ellsworth, Kan., has leased the Westerman Garage.

W. M. & O. J. Harmon, Chanute, Kan., have bought the Oriental Garage from E. M. Cooper.

Arthur Tucker, Smith Center, Kan., has bought the Maxwell Garage.

Pearl Courter, Paola, Kan., has bought the Platt Garage.

Carl Fay and T. H. Traynor, Dodge City, Kan., have leased the garage of W. T. Hale & Son.

J. B. Mileham, Wichita, Kan., has leased the G. K. Jackson Garage and bought the interest of Raymond Smith.

W. P. Porter & Son, Excelsior Springs, Mo., have bought the garage of the Talbott Motor Co.

H. G. Warnsholdt and J. W. Handy, Wichita, Kan., manager and assistant manager of that branch of the Ford Motor Co., have resigned to engage in business for themselves.

Mendenhall & Cross, Stockton, Kan., have opened a battery service station.

Simmons & Son, Severy, Kan., have leased the Rice Garage.

R. D. Teasley, Concordia, Kan., has bought the Meridian Garage at Belleville, Kan.

O. J. Teeters, Stafford, Kan., has bought the interest of N. Fair in the Stafford Auto Co.

Schmidt & Gies, Marion, Kan., have bought the Ehrlich Garage and moved in their tire repairshop.

Charles Benton, Pratt, Kan., has bought the garage of Ernest Lockett.

George Margietta, Pittsburg, Kan., has opened a tire-supply house under the firm name of the Auto Tire Supply Co.

Ottawa Motor Sales Co., Ottawa, Kan., has moved to the Nelson Building at Second and Walnut Streets.

Lee Krebs, Arkansas City, Kan., has bought the Union Garage.

Andrew Hart and W. O. Bussinger, Lebanon, Kan., have bought the interest of L. E. Kindle in the Main Street Garage.

Adams Automobile Co., Hiawatha, Kan., has been purchased by O. F. McGinnis and John M. Mishler.

Johnson & Bennett, Emporia, Kan., have opened a repairshop.

W. F. Bucher, Solomon, Kan., has opened a repairshop on the Golden Belt road.

Ross Haskin and Revere Coykendall, Harper, Kan., have bought the interest of Erwin Haskin in the Harper Garage.

F. E. Morrison, Holton, Kan., has bought the repairshop of the Metzger Garage.

August Karlson, Harris, Kan., has leased the Murphy Garage.

Charles Goodeagle, Chetopa, Kan., has bought the Ozark Trail Garage at Baxter Springs, Kan.

Jenkins & Moore, Emporia, Kan., have opened a repairshop.

J. D. Stacy, Newton, Kan., has leased the New Erie Garage.

Denmo-Hundell Motor Truck Co., St. Louis, distributer of Denmo trucks, has moved to Seventh Street and Cass Avenue, where a salesroom, warehouse and service station have been opened. Charles Mundell is manager.

East Texas Motor Co., Tyler, Tex., has changed its name to Kay-Connolly Motor Co.

B. F. Lowman, Geary, Okla., is now sole owner of the Allen & Lowman Garage.

Eastbrook & Holmes, Pawhuska, Okla., has purchased the Redeker & Jones Garage.

D. A. Howe, Bennington, Okla., has bought the Beames Garage.

C. E. Featherstone, Dunlap, Kan., has bought the garage of Featherstone & Whittaker.

E. E. Chance, Nowata, Okla., has bought the O. T. Garage.

Bell & Thacker, McPherson, Kan., is now the owner of the Hawley Bros. Garage.

H. E. Morris, Hill City, Kan., has sold his interest in the White Way Garage to John Thew.

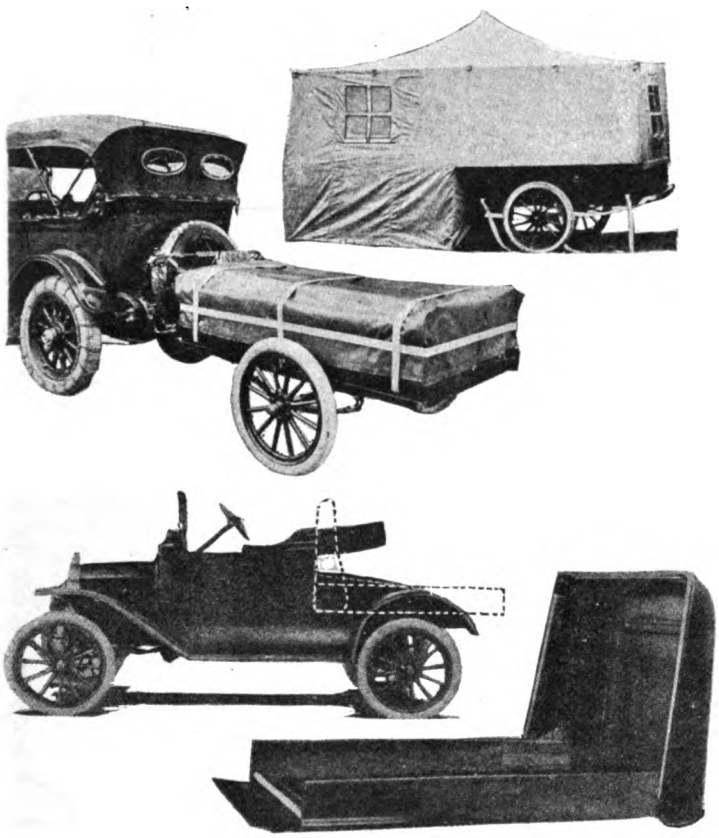
Homer Clifford, Turpin, Mo., has bought the garage of John Cornish.

New Garages

Cline & Daw (50 x 140, addition),
Moran, Kan.
Dan Elle .....Aline, Okla.
Jones Motor Co.....Kiowa, Okla.
Robt. E. Freeman.....Alva, Okla.
Cales Bros.....Ringling, Okla.
Crane & Anderson.....Chandler, Okla.
Ed Wells .....Ringwood, Okla.
Ardmore-Akron Tire Co.....Ardmore, Okla.
J. J. Brown.....Tangier, Okla.
D. M. Deiner.....Douglas, Okla
Hutsen, Ladd Auto Co.....Newport, Ark.
Mallery & Smither.....Huntsville, Tex.
Merchants' Transfer Storage Co.
Houston, Tex.
S. Bemrod Auto & Supp'y Co.
Wichita Falls, Tex.
Bradley-Rhea Auto Co.....Post City, Tex.
G. G. Markley.....Kirbyville, Tex.
Berstein Bros.....Alexandria, La.
Miller Bros.....Alexandria, La.
Kellam Motor Co.....Alexandria, La.
Lordsburg Auto Co.....Lordsburg, N. M.
A. A. Newman.....Arkansas City, Kan.
A. L. Shiney.....LaCrosse, Kan.
Kreiger & Adams.....Arcadia, Kan.
A. C. Goodin.....Wichita, Kan.
Gardner & Duff.....Concordia, Kan.
John Justus.....Bunker Hill, Kan.
Jacquith & Gilman....Baxter Springs, Kan.
Marr Motor Co.....Iola, Kan.
Uhren Bros.....Tipton, Kan.
John Mann.....Cottonwood Falls, Kan.
J. C. Teague.....Perry, Okla.
Wm. S. Forrest.....Ardmore, Okla.
Camden Motor Co.....Linn Creek, Mo.
H. L. Silvers.....Excelsior Springs, Mo.
Gentry & Son.....Louisiana, Mo.
Chester M. Francis.....Nevada, Mo.
Hunker Garage.....Salisbury, Mo.
O. C. Lange.....Kansas City, Mo.
Al Hutchinson .....Sedalia, Mo.
Reckline & Barnett.....Cuba, Kan.
Bradley Bros.....Linneus, Mo.
J. P. Klamm.....Ottawa, Kan.
Hawley Bros.....McPherson, Kan.
J. W. Handy.....Augusta, Kan.
J. H. Bunker.....Kiowa, Kan.
Welch Auto Co.....Macksville, Kan.
Grandstaff & Christ.....Harveyville, Kan.
J. W. McMullen.....Kansas City, Kan.
Graham County Motor Co.....Safford, Ariz.
Haydee Lane .....Cottonwood, Ariz.
Brown & Hudson (extension),
Excelsior Springs, Mo.
William Erickson .....Lindsborg, Kan.
Kreiger & Adams.....Arcadia, Kan.
Johnston, Quackenbush, Ottinger,
Valley Falls, Kan.
Jaqueth & Gilman.....Baxter Springs, Kan.
C. S. Bailey.....Douglass, Kan.
Schonert Co. .....Wellington, Kan.
Captain Miller .....Sabetha, Kan.
O. J. Cope.....Strong City, Kan.
Gould Larzelers .....Wathena, Kan.
Jesse Kern .....Hiawatha, Kan.
Payne & Grening.....Sabetha, Kan.
M. C. Murray.....Pawhuska, Okla.
Mageehon .....Walters, Okla.
Edwin Long .....Rolla, Mo.
Harry French & Co.....Tyler, Tex.
Radford & Lewis.....Abilene, Tex.
John Morris .....McCook, Neb.
Wherry Bros. .....Pawnee City, Neb.
Hester & Reynolds.....Poteau, Okla.
Tom Cooper .....Ardmore, Okla.
J. E. Sullins & Son.....Henryetta, Okla.

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Accessories



CAMPBELL FOLDING CAMPING TRAILER

A complete camping outfit made in two sizes, No. 1 for four persons and No. 2 for six persons. The outfit consists of one full sized metal spring bed and 25 lb. felt mattress; two folding brown duck cots and two 24-in. metal bed springs with mattresses to fit; four rolled metal folding camp stools with back, one rolled metal folding hardwood table, 2 ft. 3 in. x 3 ft., seating four persons; cooking utensils; collapsible sheet iron camp stove; ice box, 32 x 18 x 9 in. with five compartments for provisions, cake of ice, 10 x 14 in. and has drinking water cooler; 5 c.p. electric lamp operated from dry cells or magneto; three removable 14 mesh galvanized iron screens; canvas tent floor fastened to bottom by snaps making the interior vermin-proof. It is said that it may be erected in less than 5 minutes.—Campbell Folding Camping Trailer Co., 169 Loma Drive, Los Angeles.



CLAYTON & LAMBERT FIREPOT NO. 1

Several improvements have been made in this article, including a dust-proof cap or filler plug which covers the funnel and prevents dirt from getting into the gasoline which would affect the efficiency of the burner and a cushion protection band around the bottom of the welded steel tank which protects it against shocks and blows, making it almost indestructible. The burner is said to have an improved generator, making it economical in consumption of fuel. An extremely hot flame is produced and it is controlled so that severe wind or weather has little effect on it. The heaviest copper can be heated and a pot of lead melted at the same time. The top section is removable.—Clayton & Lambert Mfg. Co., Detroit.

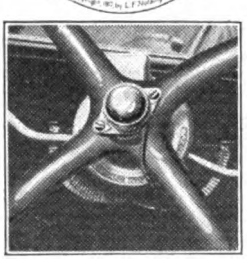
TRUCK BODY FOR RUNABOUT

It does not change the original lines of the Ford. The regular turtle deck swings up tight against the rear of the front seat and then the telescopic steel body is extended anywhere from 27 in. to 5 ft. as desired. The width is 27 in. It is finished in black to match the car. It is said that it may be attached in 1 hour and will carry 1000 lbs. Shipping weight 115 lbs.—Ever-Ready Truck Co., Fisher Bldg., Chicago.

E. & S. JUNIOR JACK

A smaller jack weighing 58 lbs. and selling for $15 similar to the Combination Jack, manufactured by this concern. It is sold with a money back guarantee. It may be used for lifting a car and turning it.—Ellis-Smith Mfg. Co., 216 Niagara St., Buffalo, N. Y.





BUL-ZI NUT

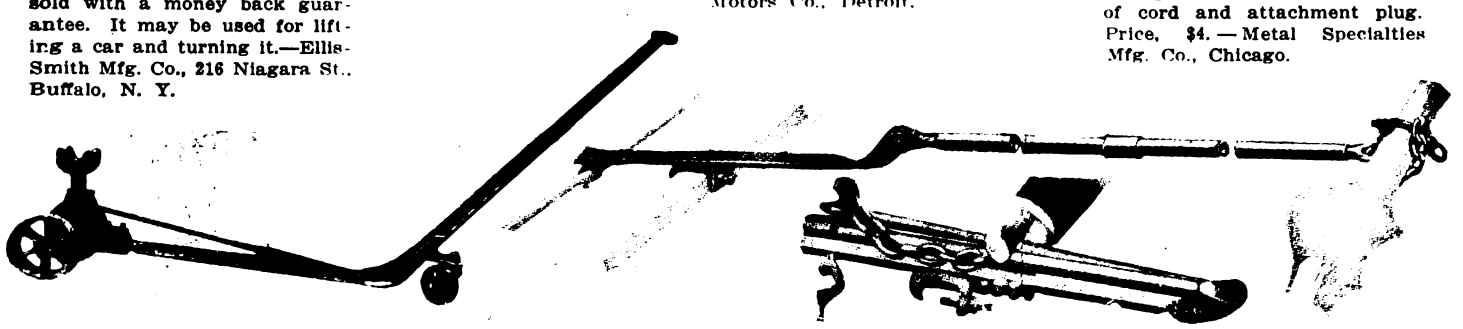
This nut takes the place of the standard Ford steering wheel nut and is designed to hold the regular Ford horn button in the center of the steering wheel. Price 25 cents.—Bul-Zi Nut Mfg. Co., Kansas City, Mo.

TOZALONE FOR FORDS

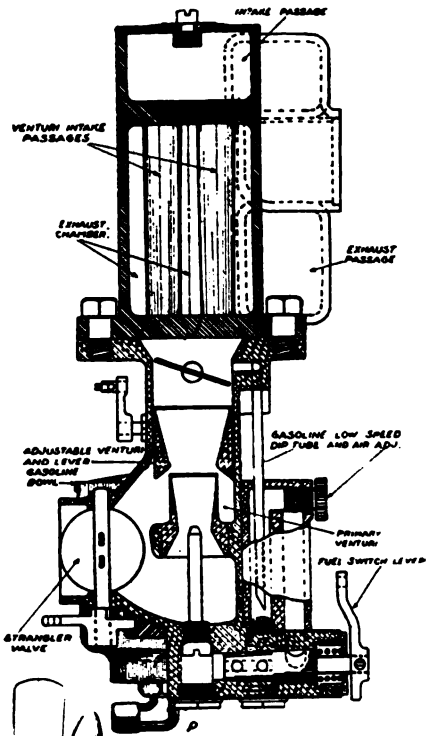
A telescopic towing bar which it attached to the towing car by a chain and to the front axle and tie rod of the car to be towed, the bar being pivoted on the axle and tie rods so that the car is steered automatically. The tow bar is collapsible and may readily be fitted in any tool box. Price $8.65.—Consolidated Motors Co., Detroit.

PRESTO ELECTRIC HEATER

In the description of the Presto electric heater on page 62 of the Oct. 10 issue it should have been stated that the current consumption was 100 watts instead of 100 amps. The device is placed in the hood and keeps it warm. It may be connected to any 110-volt lighting socket, either direct or alternating, and is sold with 10 ft. of cord and attachment plug. Price, $4. — Metal Specialties Mfg. Co., Chicago.



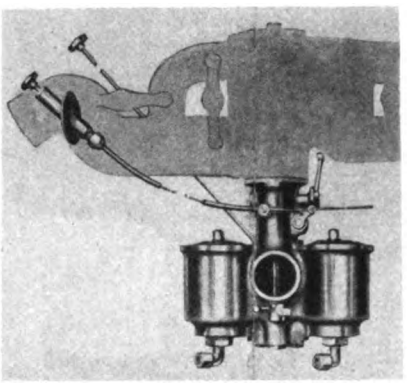
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APCO BRAKE HANDLE RELEASE FOR FORDS

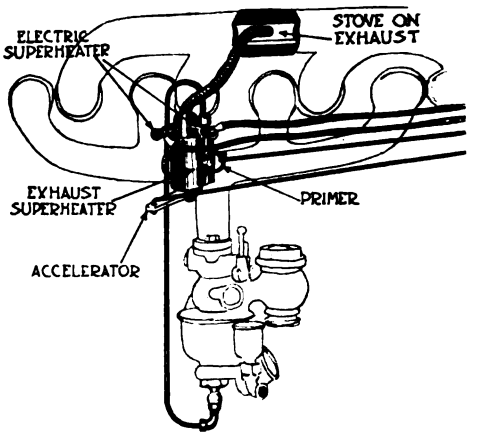
A positive brake release handle holding the pawl firmly in contact with the ratchet quadrant by a heavy spiral spring. It is said to be easier to operate than the standard Ford arrangement and may be installed in a few minutes.—Auto Parts Co., Providence, R. I.



KERO-KARBURETOR FOR FORDS

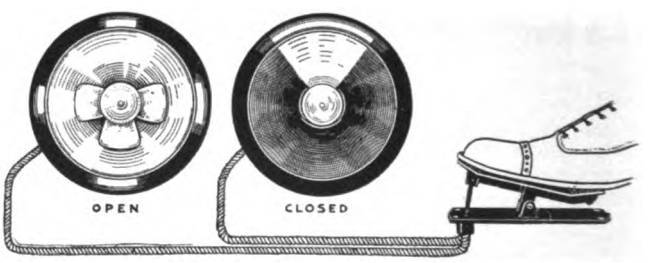
An exhaust-jacketed mixing chamber and a special effort to finely vaporize and thoroughly mix the fuel and the air, are the features of this kerosene carbureter. The fuel is vaporized by air rushing past the venturi tube in which the nozzle is situated. Above it is another venturi, the up and down position which is adjustable so that the total flow of air may be regulated from the dash. The air coming through the second venturi divides and mixes the fuel, the mixing passing up through the heating chamber which consists of a series of tubes which are surrounded by exhaust gases. Here the fuel is thoroughly vaporized and mixed.

Easy starting is obtained by using gasoline and after the engine has been warmed, it is possible to switch to kerosene by manipulating a switch. It is sold with a 30-day trial. Price $35.—Kero Karburetor, 29 S. La Salle Ct., Chicago.



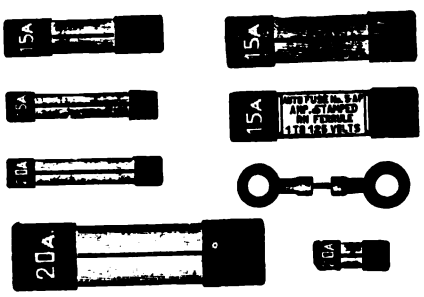
PERFECTION 5-IN-ONE VITALIZER

Warm gasoline vapor is supplied directly to the manifold for easy starting, the fuel being drawn from a pipe which replaces the drain cock on the bottom of the carbureter, and heat being supplied by an electric heating coil. After the engine is started, the current is switched off and when the exhaust becomes hot, warm air is drawn through an exhaust stove through a flexible pipe to the manifold, thus supplying heat for complete vaporization. This extra air also gives better economy. Price $10.—American Spring Tire Co., 30 W. Lake St., Chicago.



BUTTERFLY AUTO LIGHT CONTROL

The Butterfly headlight control cinsists of three nickel-plated steel wings that fit over the lamp socket, and extend on three sides of the lamp bulb. These wings may be folded over the lamp bulbs through the action of a pedal. It is said to meet the requirements of light ordinances, and not to interfere with the lighting system in any way. The device may be installed in any car, and requires only that holes be drilled in the lamp and in the floor board, for the control wires. Price $3.50 per set, complete. — Sparta Mfg. Co., Grand Rapids, Mich.



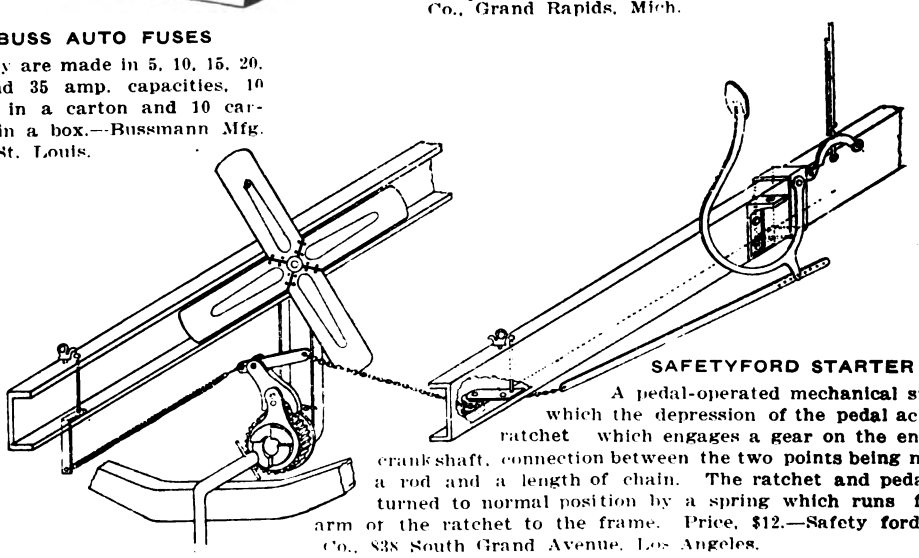
JEFFERSON TESTER

A compact outfit for testing automobile lamps regardless of size or voltage, spark plugs, electric horns, and, in fact, any device that requires low voltage. It is operated from any direct-current voltage line or from a 6-volt storage system or four dry cells. Types Nos. 16 and 17 are equipped with the Jefferson trouble-proof vibrator, and a pearl push button located on the top of the box makes contact with the plugs. The No. 17 tester is equipped with one single and one double contact Ediswan lamp socket and flexible spark plug testing rack. It is equipped with 7 ft. of cord. Price, $10; Nos. 15 and 16, $6 and $8, respectively.—Jefferson Electric Mfg. Co., Chicago.



BUSS AUTO FUSES

They are made in 5, 10, 15, 20, 30 and 35 amp. capacities, 10 fuses in a carton and 10 cartons in a box.—Bussmann Mfg. Co., St. Louis.



SAFETYFORD STARTER

A pedal-operated mechanical starter in which the depression of the pedal actuates a ratchet which engages a gear on the end of the crankshaft, connection between the two points being made by a rod and a length of chain. The ratchet and pedal are returned to normal position by a spring which runs from the arm of the ratchet to the frame. Price, $12.—Safety ford Starter Co., 838 South Grand Avenue, Los Angeles.

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How to
Plan a New Building
6—Fundamentals of Garage Layout

Convenience, Attractiveness and Economy Are the Things to Bear in Mind. Remember Also in Selecting a Plot That the Cost of the Ground Per Car Should Be the Basis of Comparison

By Harold F. Blanchard

THERE are three things to consider when laying out a garage. They are:

1—Convenience.
2—Attractiveness.
3—Economy.

The building should be convenient, so that employees will not waste time taking needless steps; the layout should be attractive, for on this depends largely the demand for space in the garage; economy of space is essential, for the less space wasted the greater the return per square foot.

THE TIME TO DRAW THE GARAGE LAYOUT IS BEFORE THE GROUND IS PURCHASED, NOT AFTERWARD, because some plots are more suitable than others, some plots lend themselves to economical arrangements more readily than others.

When considering the purchase of a garage site, it is imperative to draw roughly all the layouts that might be used, so that you can determine to a penny what the maximum income might be.

What Can Be Done?

Just because a plot may be 79 x 87 does not necessarily prove that it will earn any more money than another plot 65 x 85. It is not enough to consider merely the area of the plot in determining its value for garage purposes, but it is absolutely necessary to get busy with pencil and paper and actually figure out WHAT CAN BE DONE WITH THE PARTICULAR PLOT in question.

Almost any ground dimensions will give a fairly good layout, but that is beside the point, which is, that if maximum return is to be made on the investment, FAIRLY GOOD IS NOT GOOD ENOUGH.

The question that is most important is, HOW MUCH WILL THE LAND COST PER CAR, not how much per square foot? Under certain circumstances a plot 80 x 100 will hold as many cars as one 100 x 100, yet if the former were worth $8,000 it would seem that the latter would be worth $10,000, and this would be true for many classes of buildings, but with a certain arrangement both will hold fifty-six cars, which makes the cost of the land about $143 per car in the first case and about $178 in the second.

Consequently the former plot would be much more economical, and if it equalled the latter in every other respect it would be the logical one to buy.

FOLLOWING articles will continue the question of scientific layout, after that plans for standard plots will be considered, and then finishing, decoration and equipping of the interior will be described.

We shall be glad to draw a plan for you or give you any other aid in your building, free of charge. But be sure to send full details, including a sketch of the plot, showing position of streets.

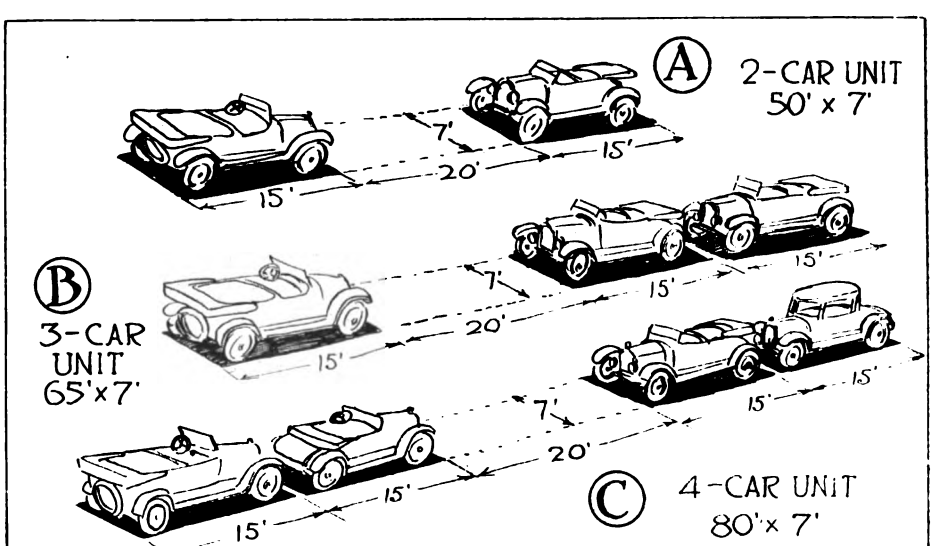
In Choosing a Site

In choosing between two sites it must be borne in mind, however, that there are many other important considerations besides economy of layout, among which are location of building, with respect to trade, etc.

No matter what the shape or the size of the garage is, there are only three ways of arranging cars, as shown:

A—A row each side of a central aisle.
B—Two rows on one side of the aisle, and one row on the other.
C—Two rows each side of a central aisle.

AN ECONOMICAL GARAGE LAYOUT DEMANDS THAT THE AISLE SPACE BE MINIMIZED. No matter how the cars are arranged, they still retain their original dimensions; it is only in the reduction in aisle space that economy can be effected. The average car has an overall length of about 15 ft. and requires a space about 7 ft. wide. The largest cars are about 18 ft. over-



The three fundamental methods of arranging cars. These are practically the only ones used, and certainly are the only ones that are practical

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all, a Ford is about 13 ft., and electrics run from 10 to 12 ft.

The Usual Arrangement

The usual arrangement is that shown at A, page 35; the one at B is employed here and there, and the one at C but rarely.

At first glance it may seem that the B and C layouts would only result in trouble and inconvenience, because the front cars must be moved out of the way before the rear cars can be touched. Providing a little care is exercised in placing the cars at night there is no reason why there should be any difficulty in the morning. As the cars are brought in, the drivers should be asked what time they will want their machines in the morning, and those desired before 10 a. m., for example, would be placed in the front row and those after that in the rear row. The doubtful ones might be placed in the single row on the other side of the aisle, as is indicated in B.

Here and there throughout the country garagemen are using this layout and are experiencing complete satisfaction. Neither does the size or the location of the town seem to have anything to do with it, for there are garages in the smallest towns as well as in the biggest cities that are using this plan with equal success.

Determining Garage Length

Since the breadth of the space required by a car is about 7 ft., the length of the garage may be any multiple of 7, or since the spaces may be made just a little over or under 7 ft., the length of the garage may be almost anything at all without affecting the economy of the layout.

Bear in mind that the term length of garage space means the dimension parallel to the aisle, and that the breadth is the distance perpendicular to the aisle. Consequently, if the garage is located on a corner and the entrances are on the side street, the garage length would be the breadth of the building. This definition is important, because it emphasizes the fact that the only difference between inside and corner locations is that the latter may have the aisles crosswise instead of lengthwise.

Breadth Is Important Dimension

It is therefore apparent that the important dimension is the breadth. It is desirable to keep the width as small as possible, so as to minimize the cost of both the land and building, but the aisle must not be made too small or it will be difficult to move cars in and out.

Other things being equal, the most attractive garage from the customer's standpoint is the one with the widest aisle, and this is a selling argument that should not be overlooked in determining the width.

There is one way of overcoming, partially at least, the objections to narrow aisles, and that is to use a special turning jack; few garagemen fully appreciate the advantages of this device. It permits moving a car in and out of a cramped aisle in a fraction of the time that would ordinarily be required. No extra labor is needed for its operation. The floorman that watches the driver can operate it, and the car is run under its own power.

Careful Study Needed

When there is a choice of garage sites, a careful study should be made to determine whether the A, B or C layouts will be most desirable, always remembering that A is slightly preferable from a merchandising standpoint, but that the gross area per car (including aisle) amounts to 175 ft., as against 152 and 140 for B and C. These figures assume that the cars are 15 ft. overall, and that the aisle is 20 ft. wide.

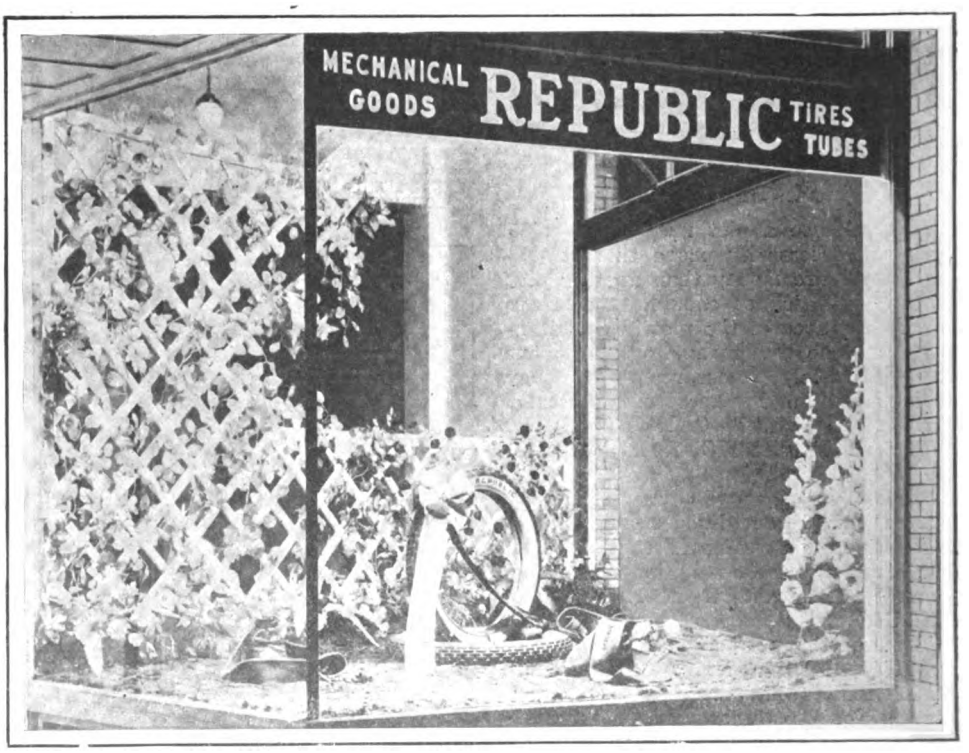
The minimum breadth that the garage may be built depends on the size of the cars to be stored. A building 45 ft. wide might be ample in the country or in a city suburb, where the average car size was 15 ft. or usually less, and 18-ft. cars were unusual, but this garage would be next to useless in the fashionable section of some large city, where three-quarters of the cars are over 15 ft.

These dimensions are merely suggestive and should not be followed blindly; the lengths of the cars and the aisles required should be determined in each case.

GARAGE WIDTHS

Layout	Type of Garage	Width: Car length + Aisle + Car length	= Total
A	Ford or electric..	13 + 15 + 13	= 41
A	Country	13 + 15 + 15	= 43
A	Small-town	15 + 15 + 15	= 45
A	City	15 + 20 + 15	= 50
A	Big city.....	15 + 23 + 17	= 55
B	Small-town	15 + 15 + 15 + 15	= 60
B	City	15 + 15 + 20 + 15	= 65
B	Big city.....	14 + 15 + 23 + 18	= 70
C	Small-town	15 + 15 + 15 + 15 + 15	= 75
C	City	15 + 15 + 20 + 15 + 15	= 80
C	Big city.....	14 + 15 + 23 + 16 + 18	= 97

Simplicity Marks Effective Tire Window



Striking Fall window display staged for Republic non-skid tires and tubes. The trellis work in the rear, covered with vines provides a rather inexpensive but attractive back ground. The effectiveness of the window is increased by the fewness of the articles in it, only two tires and two tubes.

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Trade Conditions

1—Effect of Liberty Loan on Car Sales
2—Used Car Situation Is Not Acute

NEW YORK, Oct. 23.—The motor-car business to-day is passing through a peculiar stage, and those who are closest to conditions are not at all backward in saying that business is not anywhere as good as it should be. All over the country sales have fallen off, in some cases to a marked degree, and there is not that degree of optimism which a year ago accompanied a somewhat similar slump.

There are several reasons to account for the slump, any one of which by itself is an important factor. Perhaps the greatest of these is the Second Liberty Loan. Dealers admit quite readily that the sale of bonds has restricted the sale of cars, and one dealer in New York states that he has had three cancellations as a direct result thereof. Others have knowledge that prospects are holding back either in order to buy bonds or because of the somewhat unsettled conditions at present. Incidentally, many dealers have themselves been devoting a large amount of time to selling bonds, and in some cases have delegated their entire sales forces to this patriotic work. This, of course, has had an effect on car sales.

Another factor has been the draft. Thousands of young men have taken up arms, and in many cases thrown used cars on the market. Offered at attractive prices, these have been taken instead of the new cars. Many men of draft age have left prosperous businesses and automatically transferred themselves from the prospect class to the discard.

The third factor is the rising cost of foodstuffs and living expenses in general. That this has had a very definite bearing on the sales slump is admitted. In general, a situation of unrest obtains, and until this is dissipated dealers do not appear overhopeful of the future.

New York Feels Effects

NEW YORK, Oct. 22—The sale of Liberty bonds has affected the sale of cars in New York City, especially since the sale is actively pushed. The effect has been most felt, of course, in the low and medium priced cars where sales are normally greatest. Statements by dealers in these lines are based upon actual instances in which prospects have refused to buy, stating that they are going to run the old car all winter and purchase in the spring.

The dealers, however, believe that spring will see a wonderful increase in car sales. They, at the same time, expect a rather hard winter. Some cars are proving exceptions to the rule due to prospective price increases and some cars are holding up to last year's record. This latter condition is generally due to the fact that cars were hard to get a year ago and sales depended upon the factory output. Selling at present, however, is more difficult than it has been in some time.

Some of the dealers state that business has been off for some months and that its present condition is in line with a natural business curve and is not a slump due to the loan.

Western Sales Improving

CHICAGO, ILL., Oct. 22—Motor car sales throughout the great agricultural belt of the Mississippi valley have improved during the last week with the farmers in several sections, but are still very slow in the cities and towns. Sales are particularly dull in the large cities, where the influence of the liberty loan drive is felt. In some parts of the grain belt, where the farmers are holding wheat and not content to sell at the $2.20 Government price, trade is slow.

Studebaker reports that where special sales organization work is carried on by branches and dealers satisfactory sales have been made, but where there is not this super-sales effort, business is slow. The farmers are not selling as rapidly as they should. These are days when it is necessary to sell cars to the farmers rather than fill orders.

F. W. Pelton, assistant sales representative of Mitchell, has just completed a circuit from Idaho Falls, Mont., to Denver, Colo., Salt Lake City, Utah, and Dallas, Texas. In Texas the entire state was well represented at the Fair last week, and farmers were buying in increased quantities. The cotton crop being two weeks late has delayed buying considerably. Generally, reports from farmers from the Southwest are most encouraging.

Coast Prefers Bonds

LOS ANGELES, Oct. 20—With airplanes flying over the city distributing Liberty loan literature, and dealers taking full-page advertisements in the newspapers urging loan subscriptions, the fact remains that the Second Liberty loan has cut into sales here. Dealers acknowledge that their business is being seriously affected and that, conservatively estimated, sales are off from one-third to one-half.

The slump is laid directly to the second Liberty loan, for, it is pointed out, it has lasted only during the past 10 days or during the loan drive. Dealers are optimistic, however, and believe that conditions will soon be normal again. The combination of the war tax, the Liberty loan and recent price increases have created an unusual situation. Following are opinions of several dealers:

Ralph H. Hamlin (Franklin and Scripps-Booth): Business has been slowing up for two weeks, due probably to the loan.

Harris Hanshue (Apperson): No question but the loan, the war tax and price increases, coming together, have had a bad effect.

Don Smith (Chandler): Persons who buy motor cars are the same ones who buy bonds, and just now they prefer the bonds.

L. V. Starr (Chevrolet): Loan has cut business in half.

S. B. Smith (Paige and Peerless): Effect of loan has been very slight.

A. M. Leach (King, Dort, Liberty, Premier): First loan slowed up business for about six weeks, and the effect of the second, though only temporary, is being felt now.

P. H. Greer (Hupmobile, Chalmers): Business is almost normal.

Howard Auto Co. (Buick): We have noticed little slowing up.

Studebaker Corp.: Business has slowed up this week, due to the loan.

Lord Motor Car Co. (Maxwell): Sales have fallen off, though we think it is the combination of the loan and the tax and neither alone.

E. E. Caister (Marmon): We have noticed a slowing up lately and believe it is the loan.

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James L. Irving (Cole): So many things coming at once have caused buyers to hesitate.

H. C. McVey (Oakland): It is hard to get the public interested in motor cars because of the Liberty Loan.

F. S. Albertson (Hudson and Dodge): We have not noticed much change yet.

Acute Shortage in Detroit

DETROIT, Oct. 22—The car shortage situation here at present is very acute and there is an insufficient supply of cars on hand at present to care for the necessary shipments. Orders have recently been issued by the Car Service Commission at Washington specifying that all automobile cars shall be returned either loaded or empty to or in the direction of the home road.

In many quarters heavy demands have been made for cars, particularly in the east, and the lake routes are at present offering an outlet for shipments in this direction. The Detroit River front is packed with outgoing cars and it is possible that the service will be increased from time to time in order to accommodate the manufacturers desiring to take advantage of the water route before winter comes in.

Several other problems are confronting manufacturers. Large demands on the steel and aluminum market caused by the war orders render the procuring of materials difficult and the condition of the labor market for the same reasons predicts a labor shortage. This condition has not become marked at present but doubtless will be felt by the first of the year.

The war order situation has tended to increase the shipping difficulties, as war orders being filled here must be transported to the seaboard.

Loan Hits Chicago

CHICAGO, Oct. 20.—The Liberty Loan drive has slowed motor car sales up very much in Chicago and territory, but it is difficult to say just how much because the bad weather of the entire month of August has put the business off at least 60 per cent in the Chicago territory. This is the opinion of several dealers representing different priced cars.

The weather in October has been very wet, and this coupled with the bad roads of central and southern Illinois means that there are many sections where cars have been waiting for three weeks to be driven in parts of the country where the roads are too bad to admit of it. Chicago dealers are getting a real lesson on how bad roads hold back the sale of cars.

All the dealers feel that a few warm days would bring business back with a leap and a bound, but that these days must soon come or they will lose their magic. With this condition you must couple the war tax. Add an increase in freight, which means from $4 to $10 more per car. Add to this the tightening of bankers on money and you have the sum total, which makes it very hard just to know the exact effect of the Liberty Loan drive.

There is no more patriotic motor car row to be found in the country and no liver dealers' organization than the Chicago Automobile Trade Association in the present Liberty Loan drive. The trade association is working with all its members and issues a daily poster showing exactly how its members are subscribing along the row. These will be issued daily until the end of the drive. The report shows the situation up to Oct. 18. On a left of the thermometer is shown the concerns whose employees have subscribed and the percentage of their employees who have subscribed. On the right are those who had not reported sales on that date. These bulletins are on the showwindows of nearly every shop that has subscribed.

All dealers are working hard for the loan, no matter how much it cuts into their business. In one of the big places one salesman refused to buy a bond and he was told that if he did not buy a bond he was not good enough to work in that place. He soon bought one.

Still another example of how the Liberty Bond issue is taking hold is shown in an advertisement of the Packard branch, which announces that all money received during the present week will be invested in Liberty Bonds.

Boston Feels the Loan

BOSTON, Oct. 23—The Second Liberty Loan is affecting sales in a very decided manner, but not because people are putting their money into bonds instead of cars.

Practically every dealer in Boston has been giving his whole time, the whole time of his entire sales force and the whole time of his office force to selling Liberty Bonds, in one of the greatest drives ever tried by automobile salesmen.

The central committee for the Liberty Loan apportioned $2,000,000 as the share for the automobile dealers to sell, and J. A. MacGregor, Oldsmobile distributer, was appointed chairman. Monday afternoon at a meeting of dealers and salesmen the question of selling the bonds was put fairly before the meeting, and practically every dealer pledged the entire time of his forces for 3 days, Wednesday, Thursday and Friday, to the selling of bonds.

During that time most of the salesmen were forbidden to even mention the selling of cars and they were sent out on a fine-tooth-comb hunt for the wary man with money. Saturday night, when a partial tabulation of results was made, it was found that the total had gotten up to just about $1,000,000. The drive will probably be continued the latter part of this week.

The dealers as a whole are optimistic, and they do not believe the loan will do more than temporarily slow up the selling of cars.

Kansas City Doesn't Feel the Loan

KANSAS CITY, Oct. 23.—Most dealers state that the second Liberty Loan has not affected sales and that business has never been so good before. Reports are that farmers are not buying bonds even when selling committees call on them, though there have been some known cases both in cities and small towns of persons buying bonds instead of cars. The Chevrolet distributer states that the loan has affected only his city sales.

Not the Loan in Detroit

DETROIT, Oct. 22—In spite of the fact that new car sales, on the whole, are below normal, dealers state that the second Liberty Loan is not the cause, and that business conditions for the future look brighter. During the past week the market on light cars has in some instances approached normal, and the medium and higher priced cars have taken a slight upward trend. The general unsettled conditions, not the Liberty Loan, seem to have affected the buying public.

The draft, enlistment and doubt as to future plans have removed one definite group of the buying public from the prospect field. This group comprises those men between the ages of 20 and 40, who have good paying positions, and who normally would be purchasing new cars. These men do not know how long they will remain in their present positions, or how long it will be before they are in the army. Hence they are not spending their money for cars.

It is evident the Loan can only be considered as one element in the present condition, and that now is removed, as Detroit has already oversubscribed its quota.

No Used Car Overstocks in Most Sections of the Country

Coast and Middle West Have a Few More Than Are Necessary—Situation Not Bad—Bond Buying Has Its Effect

NEW YORK, Oct. 23.—Except in some sections of the country, notably in the Middle West and on the Pacific Coast, there does not appear to be an oversupply of used cars on hand at the present time.

Dealers report good stocks on hand, but are not alarmed, because this is the season when stocks naturally would be large, what with many owners turning cars in for sale during the winter and others turning them in to take delivery of new models which now are starting to go out to dealers.

That the sale of bonds for the second Liberty Loan has had some effect on used car sales is admitted. However, the effect has not been as great as has been felt in new-car sales. In fact, in some quarters the reverse has been true, some dealers reporting that prospects are purchasing used cars in preference to new ones because of the lower price and also to sidestep the new war tax which the Treasury Department has ruled will not apply.

All in all, the used-car situation is not causing any apprehension. Chicago has a large number on hand, and the same may be said of nearly all the larger Pacific Coast cities. New York has only a normal supply, and other cities report used cars moving out practically as rapidly as they come in.

Des Moines Has a Few

DES MOINES, Oct. 20—The Hudson Jones Motor Co. has fourteen used cars on hand and is making no special effort at disposing of them. Clemmons Auto

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Co. has twenty on hand. The company repaints all cars which they take in and uses newspaper advertising consistently. The Ideal Auto Co. has three used cars on hand.

The Krudenier Cadillac Co., although operating a used car department in a building separate from the main building has only one used car in stock and it is in the paint shop.

The Sears Auto Co. has five used cars on hand. This firm is doing little or no advertising on it's used cars and most of the sales made are by personal work

Buffalo Not Worrying

BUFFALO, Oct. 20—Some dealers in this city are starting energetic campaigns and offering special inducements to get rid of used cars on hand. Ralph E. Brown, sales manager for the A. W. Haile Co., Studebaker dealers, has started an advertising campaign to dispose of twenty used cars. The company has purchased twenty Liberty bonds for $50 each, and with every car sold a bond will be given. In addition to the bond there is an added inducement in the fact that the used-car prices have been reduced. The sale continues until Nov. 1.

The Packard-Buffalo company had a used-car sale last week and got rid of a dozen cars, but there are still ten on hand.

The Overland dealer has forty cars on hand now and has sold 500 since the first of the year, having recently completed a mammoth sale. The Monroe Motor Car Co. is offering special prices on eight used cars. The Meyer Motor Car Co. last week conducted a used-car sale to dispose of ten cars. With a dozen old cars on hand the Franklin agency is resorting to newspaper advertising and the gift of $50 Liberty bonds with three of the cars. The Oldsmobile agency has fifteen used cars on hand.

Klepfer Bros., Buick dealers, have twelve used cars in stock, and say there is no difficulty getting rid of them. The Chevrolet agency, Joe Rath, president, makes it a point never to take in more than five or six used cars until the older ones are sold. The Loveland Co., almost exclusive dealers in used cars, have 25 on hand.

Mason B. Hatch, Chalmers and Premier dealer, says he has not sold a used car in two weeks from his used-car department, although he is taking time payments. Hatch has ten used cars on hand. The Hudson-Oliver Co., Hudson distributer, has twenty-four cars in the used-car department.

Detroit Feels the Pinch

DETROIT, Oct. 23—New car sales are stopped up to a great extent from the bottom—that is, there is but little market for used cars. In fact, in some cases is the number of used cars on hand so great that the dealers are refusing to make any trades and in several cases the dealers are preparing to make a drive on used cars in an attempt to clear the market.

The reason for this condition is evident. Many young men in going to the training camps have been forced to dispose of their cars at a sacrifice. It is not an uncommon sight to see a 1917 car standing at the curb, with the sign: "Drafted was $1,950, for sale, $900." This has flooded the market with used cars, supplied the normal market, and forced the dealers in many instances to lower the price on their used cars.

But in spite of these apparent indications of a poor coming season, dealers of the old line are standing pat. They have confidence in the future, are placing orders for new cars, and are preparing for a good business this winter. They have expected that business would be different, that problems would arise, and are working harder to meet the new conditions. And where this has been done the reports are encouraging.

One dealer stated that he was stocking up with all of the new cars he could get; another that the factory was the only limiting factor in the number of sales made. Both are successful dealers in the low price field. A third said that he had sold 7 used cars on the last Sunday—and to-day had only 3 on hand. He said that he had done it by good hard sales effort—while his competitor was saying it could not be done.

This seems to sum up the entire situation. Business is off, but hard work, careful planning and confidence, together with a realization that new methods must be adapted to meet the new conditions, have succeeded. And the dealer that intends to stay in business must do likewise.

Hartford Nearly Normal

HARTFORD, Oct. 23.—Fourteen leading dealers have a total of 132 used cars on hand, and this number is not considered to be far above normal. Newspaper space is being extensively used and several dealers have recently staged used car sales weeks. Most dealers are trading more closely than in the immediate past and practically all of them expect salesmen to take cars in to get rid of them.

Demand Slow in St. Louis

ST. LOUIS, Oct. 22—There are about 800 used cars on sale in St. Louis to-day, according to the estimate of James H. Gibson, used car manager for the Overland Automobile Co. This estimate was made with positive knowledge of the number in stock by the five largest dealers and a fairly accurate knowledge of the smaller stocks. It was concurred in by other used car men. The demand at present is slow, especially for Fords and other light cars, this fact being due to prompt delivery at present of light cars; country buying is proportionately very heavy; dealers generally have special used car departments under separate management and advertising is done in classified columns of newspapers.

New York Stock Average

NEW YORK, Oct. 22—The stock of used cars in New York is not above the average and dealers are not apprehensive of the future. Some of them report a somewhat larger volume of trading than a month ago and most of them report a good market for used cars in good condition. It is stated that the second Liberty Loan is having a noticeable effect on sales, though it is believed that this will be only temporary. Several dealers are staging used car sales and many of them are using rather more newspaper space than usual at this time.

Los Angeles Has a Lot

LOS ANGELES, Oct. 23—There are 316 dealers and 369 garages in Los Angeles County and these are holding from 2 to more than 100 used cars for sale. Probably there are 4500 in the hands of these dealers and adding those in the hands of brokers, vacant lot merchants and others, probably will double the figure. Some dealers are sending men into the country districts with used cars under instructions to remain until the car is sold. Other dealers are offering to exchange real estate, diamonds or almost anything of value for used cars. Newspaper space is being used largely.

Not Worrying Minneapolis

MINNEAPOLIS, Oct. 23—Eight leading dealers have 76 used cars on hand and two of these have only one car each. Most of the dealers are doing nothing out of the ordinary to boost sales, though the Liberty Loan campaign and bad weather both have made selling hard. One dealer is advertising that Liberty Loans will be accepted for used cars, and another is staging an auction sale this week.

Ford Demand in Kansas City

KANSAS CITY, Oct. 23—Six leading dealers have a total of 30 used cars on hand; they report a good demand, due to the increase of price of new cars. Used cars are selling almost as fast as they come in, though little advertising is being done. Farmers have plenty of money and it is expected that business will be good as long as the roads are good.

Heavy Stock in Chicago

CHICAGO, Oct 20—Many Chicago distributers and dealers are heavily stocked up with used cars, but as this is the season when it is customary to be stocked the situation is not worrying those that are well financed, but is giving some concern to those who have difficulty in securing real money, or liquid cash, as it is beginning to be termed along motor row on Michigan Avenue here.

The number of used cars held by distributers, branches and dealers here varies from two to 120. Some have twenty, some sixty, a few over eighty, some over 100 and others nearly as high as 20. These stocks have been coming along rather quickly, as is general at this season. For example, several dealers get back some cars that were sold on time payment plans, buyers having failed on the last few payments. There are several cases where men now drafted bought cars on the time payment plan and turned them in rather than meet the last notes. At this season of the year many owners who want to buy new cars in the spring leave their used cars with dealers to sell and at the same time place a spring order for a new job.

There are a few dealers who have unfortunately stocked up with used cars due to their mad desire to move new cars. But they pass the buck to the manufacturer, declaring that he is stark mad on production and compels the dealer to take cars or lose the agency. In such cases over allowances have been made for used cars and prices cut on new sales. During the last few weeks, and during the last ten days, some of such dealers have been absorbing the 3 per cent war tax instead of passing it on to the buyer. The situation is a dangerous one, in these days when the dealer's position is not a desirable one.

A new angle was injected into the used car market here on Monday morning, when all of the retailers and distributers in the block on Michigan Avenue, between Twenty-fourth and Twenty-fifth streets, placed a co-operative advertisement in the Tribune advertising that part of motor row and the real center of the used car market. The advertisement created a real furore with other dealers not located in that zone. There were some indignation meetings, but it is understood that those pioneering the idea have promised not to repeat and the storm has blown over. The advertisement really showed that some of those dealers are quite concerned over the stock of used cars on hand. It was surmised at first that the idea of a single advertisement signed by over a dozen dealers was conceived by some advertising solicitor but it originated with some of the dealers.

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Later in the week there appeared a full page advertisement signed by over a score of dealers in which the public was urged to buy cars now, because the prices were certain to go higher. This advertisement was apparently created by a rival newspaper solicitor.

Few Cars in Columbus

COLUMBUS, Oct. 22—Columbus dealers have no great number of used cars on hand. Their supply is being moved as quickly as usual and most of the dealers report a good demand. About half of the dealers are using special advertising and their efforts have met with considerable success. A large majority go over the cars thoroughly, painting them if necessary and giving a limited guarantee to the purchaser. In that way they have been successful in building up a good trade. It has been found that it does not pay to sell used cars, in many instances at least, "as is," but it is better to thoroughly overhaul them and cover the cost by an increased price, which the customer is willing to pay.

Milwaukee Stocks Are Low

MILWAUKEE, Oct. 23—Milwaukee dealers state that existing stocks of used cars are less than stocks on hand a year ago by 50 to 60 per cent. Sales in recent weeks have been in large volume without extraordinary effort and dealers state that this seems the proper moment for a used car selling campaign. In consequence, many houses are this week devoting their energies to selling used cars. A joint used car show is being conducted by Frank J. Edwards and Jesse Smith. Dealers are using newspaper space and it is stated that in the face of increasing prices of new cars and the war tax, dealers are able to make used car prices look attractive.

Dealers Have Gotten Behind the Liberty Loan With a Push

Trade Everywhere Has Been Active in Getting Money Into Country's Coffers—Many Are Financing the Purchases of Employees

NEW YORK, Oct. 23.—No other group of business men in the country has rallied to the support of the second Liberty Loan with as much enthusiasm and as wholeheartedly as has the motor-car industry. In every city, dealer organizations have put their shoulders to the wheel and helped push the great drive along. Individual dealers have subscribed up to the limit of their resources and have used every lever available to insure liberal subscriptions from their employees.

The fact that dealer organizations have been temporarily disrupted that salesmen might devote their efforts to disposing of bonds instead of cars is merely incidental, and no better indication of the patriotism of the dealer industry could be given.

The individual efforts of dealers have been supplemented by the efforts of committees formed by various cities. These have co-operated with chambers of commerce and other civic bodies, and in the aggregate a stupendous total has been rolled up. The plan of permitting employees to purchase bonds by making small weekly or monthly deductions from their pay has been worked even more than was the case in the first loan, and to-day there is scarcely an employer who is not willing to thus assist in the financing of bond purchases for any and all his workers.

Detroit is Over Subscribed

DETROIT, Oct. 20—This city is among the first to over subscribe its official quota of $43,000,000 on the Liberty Loan, and in no small part is this due to the motor car manufacturing interests in the city. The workmen themselves, exclusive of the factories as institutions, have subscribed from $75 to $100 per man. In shops of over 500 employees, a total of 105,000 men, $5,019,850 have been subscribed, and the 220 smaller shops have turned in a total of $2,000,200 to date.

A standardized plan for soliciting in the shops was formulated by the Liberty Loan committee, and in those cases where the factory co-operated, nearly every employee subscribed $100. By this plan meetings were held for all of the men; the foremen became salesmen for their group, and the factory employees underwrote all subscriptions. A petition form was used, so that each man in the group could see how much his fellow workman had subscribed.

K. C. Wants Big Total

KANSAS CITY, Oct. 23—Up to noon today dealers and employees had subscribed to 100,000 worth of Liberty Bonds and the committee is still working vigorously. The dealers' association has not done anything as

Des Moines Buys $134,750 Worth

DES MOINES, Oct. 23—Des Moines dealers, garage owners and their employees bought Liberty Bonds in amount $134,750 under the capitancy of J. H. W. Mackie of Mackie Motors Co. The motor trades led thirty Chamber of Commerce teams in the number of individual sales, their total being 522 bonds sold. Des Moines Automobile Dealer Association, as an organization, took no part in the whirlwind campaign of 4 days, but motor trades of the Chamber of Commerce had the solid support of all dealers.

Minneapolis Way Ahead

MINNEAPOLIS, Oct. 23—Up to noon today dealers had subscribed for $324,250 worth of Liberty Bonds and it is expected that by Wednesday noon the total will run over $350,000. Of the former amount, the Minneapolis Automobile Dealers' Association subscribed $10,000 and managed the campaign. On Thursday there is to be a big parade and motor car dealers will practically head the list of subscriptions in proportion

Columbus Dealers Take $20,000

COLUMBUS, O., Oct. 23—It is estimated that Columbus dealers have bought approximately $20,000 worth of Liberty Bonds. The dealers have purchased liberally and a number of them have agreed to accept bonds in payment for cars. Already upwards of $25,000 in bonds has been accepted by dealers on this basis. The dealers' association is considering subscribing for the loan, but has not yet taken final action.

$300,000 for Buffalo

BUFFALO, Oct. 23—Buffalo dealers have subscribed $300,000 for Liberty Bonds. The Buffalo Automobile Dealers' Association has 15 two-men teams in the field. Charles V. Kane is general chairman.

Milwaukee After Record

MILWAUKEE, Oct. 23—Milwaukee dealers through the Milwaukee Automobile Dealers, Inc., have solicited subscriptions for the Liberty Loan aggregating $108,000 up to noon to-day. The original estimate was $75,000, but it is expected that the total will reach $175,000 toward the Milwaukee County quota of $25,000,000. Every member of the association is working on a special committee. The grand total of the city is already $18,000,000.

Chalmers Increase Nov. 1

DETROIT, Oct. 20—The Chalmers Motor Co. will increase its prices Nov. 1. The five-passenger touring and the roadster will be increased from $1,250 to $1,365. The seven-passenger model from $1,350 to $1,450. The new prices include the war tax of $30. The prices of the other models remain unchanged.

Moline Price Increase Nov. 10

EAST MOLINE, ILL., Oct. 20—The Moline Automobile Co. will raise its price Nov. 10. The Moline-Knight Model C touring cars and roadsters will be raised in price from $1,495 to $1,575. The Model G touring cars and roadsters will be raised from $1,840 to $1,950.

Merien Heads St. Louis Truck Dealer Body

ST. LOUIS, Oct. 22—The organization of the St. Louis Truck Manufacturers' and Dealers' Association has been completed by the election of Charles A. Merien, One-Wheel Truck Co., president; Wastell Gray, International Mack Corp., secretary; N. F. Sutton, General Motors Truck Co., treasurer.

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Outlaw Racing Body Tries to "Get" A.A.A.

Somewhat Mysterious Movement Is Found in Uniontown—But It Doesn't Get Far

UNIONTOWN, Pa., Oct. 20—An attempt to form an outlaw association to control motor racing on certain so-called speedways in the country came to light here at a meeting held preliminary to the races to be held on the speedway here to-day, but which were postponed for a week, because of bad weather. In the motive is unquestionably a carefully thought out plan to overthrow the Contest Board of the American Automobile Association, which has sanctioned speedway racing and other motor racing since the inception of the sport.

The proposed outlaw organization known by the high-sounding and misleading name, "National Grand Circuit of American Speedways," while purporting to have submitted its plans to many of the speedways really did not do so, and so brands itself as an individual effort on the part of one or two to get hold of many unsuspecting drivers, who have already, it is reported, signed contracts for the 1918 season with the outlaw organization.

While the outlaw organization came to the surface at the meeting here, it is well known that it was conceived in another part of the country and it is not the conception of anybody in Uniontown. It was known more than a week ago that such a movement was under way, and such major speedways as Indianapolis, Chicago, Cincinnati and Providence agreed to have nothing to do with such an outlaw organization and to stand by the Contest Board of the American Automobile Association. This action of the speedways refutes the statement given out in Uniontown to the effect that the matter had been laid before the other speedways and had been considered favorably by them.

It is reported that 29 drivers have signed for the 1918 season with the outlaw organization, which, in the contract with these drivers, is represented by Johnson, the local speedway president. These drivers have signed away their very existence according to the contract and agree to drive for nobody but the outlaw organization during the 1918 season.

Some idea of the contract which drivers have signed may be gathered from the following brief excerpts:

The season is to begin May 10, 1918, and run to Oct. 31, 1918, and during that time 2000 miles of racing is to be scheduled. The "Grand National Circuit" is given the power to establish rules which become part of the contract, and may impose fines for violations, or suspend drivers. Rules of the A. A. A. are to be adhered to "in-so-far as deemed advisable."

The "Grand National Circuit" is to subscribe $50 per mile of racing, to transport all cars free of charge and to furnish two railroad tickets for each car. In case of disabled drivers, compensation will be paid "as may be prescribed in the rules to be adopted." Drivers who signed a contract are not permitted, without written consent, to participate in races not sanctioned by the "Grand National Circuit."

Among some of the more prominent drivers who are reported to have signed the contract are Andy Burt, Omar Toft, O. F. Haibe, Jack LeCain, Eddie Hearne, I. P. Fetterman, Neal Whalen, Earle DeVore, Gaston Chevrolet, Ira Vail, Thomas Milton, Pete Henderson, Gil Anderson and Dave Lewis.

Johnson states that plans have not yet matured to the point where the names of speedways, alleged to have signed his contracts, may be made public.

Oppose Price-Fixing

NEW YORK, Oct. 20—New York business men have placed themselves on record as opposed to any general plan of price fixing. At a hearing held at the headquarters of the Merchants' Association, the prevailing opinion was that if such a measure were carried out, it would do more harm than good. A hearing was given on seven proposals formulated by a committee of the Chamber of Commerce of the United States and submitted to the Merchants' Association of New York. The proposals recommended by the committee are:

1—To create authority to control prices during the war.

2—That authority to control prices should extend to all articles which have importance in basic industries as well as in war and which enter into the necessities of everyday life.

3—That authority to control prices should extend to raw materials and finished products.

4—That authority to control prices should extend to prices the public pays as well as those paid by the government.

5—That authority to control prices should be administered by a small executive board appointed by the board.

6—That an agency working in harmony with the board controlling prices should have authority to distribute available supplies to those purchasers whose needs are most directly related to the public welfare.

7—That each leading industry and trade should create a representative committee to represent it in conference and to advise with agencies that control prices and distribution.

R. H. Johnston, manager of the White Co., New York, presided and explained that the purpose of the meeting was to obtain the opinion of New York businessmen for the guidance of the committee in recommending how the association should vote on the proposition.

Kansas City Ends Tour

KANSAS CITY, MO., Oct. 22—The Kansas City Motor Car Dealers' Association completed Saturday evening at 5.30 o'clock its fifth annual trade and good roads tour, which had started at 7.30 o'clock Monday morning. It covered 702 miles through southeastern Kansas, taking in agricultural districts, and the leading oil fields. One hundred men in 36 cars made the entire trip, all entering noon and night controls practically on time, and no accidents happening. E. E. Peake, secretary of the association, had arranged the route, and meetings were provided at many cities; the commercial clubs in many cases acted as hosts, and entertained the visitors.

300,000 Farmers See Big Texas Motor Show

Dallas Fair Draws Rural Moneyed Men Who Pick 'Em and Take 'Em Away

DALLAS, Oct. 20—The Texas automobile show, the biggest display of automobiles and accessories ever seen under one roof in the Southwest, is on. It opened Oct. 13 and will be closed on Oct. 28. It is estimated, after one week, that the total attendance will be more than 300,000 people. The show is being conducted in connection with the Texas State Fair, under the auspices of the Dallas Automobile Trades Association.

This year's show is unlike former shows in many ways. The "country gentleman" has been the most prominent visitor to the show. When conditions of a year ago are contrasted with those now prevailing it is not necessary to seek an explanation of the unusual attention that the salesman bestows upon the farmer. The salesman knows that the country gentleman, although he may be attired in a hickory shirt and blue overalls, is a walking definition of that recently introduced French phrase "camouflage." With sinking heart the salesman may hear his brilliant argument punctuated by the remark, "I don't believe I'll take one," but there is music in his breast as the farmer completes his reply: "Guess I'll take three." For the country gentleman in Texas is today buying motor cars in flocks.

One of the new features for this year's show is the space where cars may be taken for demonstration purposes. The building opens into a vacant space and all cars are driven through one exit to this space, where they are demonstrated.

The main aisles of the exhibit building are 20 ft. wide. The cross aisles are 10 ft. wide. There is every facility for examining the cars. Each exhibit is readily accessible to the crowds.

Emerson Motors Assets Transferred to Campbell M. C. Co.

NEW YORK, Oct. 20—The Campbell Motor Car Co., a new corporation, will take over the assets of the Emerson Motors Co., according to a transfer signed by Judge Manton in the Federal District Court. This is in accordance with a plan of reorganization agreed to by Louis H. Moos, counsel for the stockholders of the Emerson corporation, against which they had filed a petition in bankruptcy.

Since the petition in bankruptcy was filed against the company representatives of the stockholders and of the company have been working to reorganize it. As part of their plan, which will now be carried through as the result of Judge Manton's order, creditors are to receive payment in full in common stock and secured preferred stock in the new corporation. No more stock will be sold, according to the management.

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No Booze or Cabaret at Banquet of M.A.M.

Affair to Be Held as Usual But Toned Down—Serious Business Talks to Be the Rule

CLEVELAND, Oct. 19—The Motor & Accessory Manufacturers, Inc., at Board of Directors meeting today decided to hold its annual show time banquet in New York but decided to eliminate everything in the nature of frivolity and merry making. No drinks will be permitted at the banquet tables, there will be no cabaret and the program will consist of two speakers of national reputation. The N. A. C. C. has decided to hold no banquet at all.

The members are much perplexed over section 3 of the Food bill. According to the interpretation of Attorney Sidney S. Meyers, any member of a board or committee at Washington who advises or takes part in the award of contracts for the purchase of products in which he has even a stockholder's interest is liable to a fine of $10,000 and five years in jail. A strict application of this rule would eliminate from active work many M. A. M. members who have been devoting much of their time to government work. If they remain in their present war capacities, it would practically prevent the purchase of any of their goods by the government and in some cases this is a necessity. The members do not know what course of action to take.

That more cars are to be delivered over the highways instead of by freight was indicated by the association's action in approving the completion of a section of the Dixie highway in Kentucky which connects good roads north and south of this poor section. Chairman Roy D. Chapin of the Good Roads Committee of the N. A. C. C. was given permission to solicit the support of individual M. A. M. members for this project.

Attorney Meyers stated that the "fake" parts question and the Morrison bill were outside the jurisdiction of the association and that any bogus parts questions must be settled by members individually.

Twenty-five thousand dollars was invested in the Second Liberty Loan. New members admitted are Menominee Electric Products, Inc., New York, generator starters and electrical apparatus; G. L. W. Spring Oiler Co., San Diego, Cal., spring oilers; Central Steel Co., Massillon, Ohio, Agathon steels; Kales Stamping Co., Detroit, pressed steel parts. This makes 282 members, the most the association has ever had. The American Bronze Co., Berwyn, Pa., has changed its name to American Bronze Corp., and the Wagner Specialty Co., New York, has changed its name to Gibralter Jack Co.

Jackson Takes Perlman Sales

JACKSON, MICH., Oct. 20—The Jackson Rim Co. has decreased its capital stock from $10,000 to $5,000. This company has completed a sales agreement whereby the sales department of the Perlman Rim Corp. of Jackson has been taken over, and whereby the sales of the Perlman corporation will be conducted from Jackson instead of New York. In the future all correspondence and trade agreements with the Perlman Rim Corp. should be directed to the Jackson Rim Co. The Perlman Rim Corp. is a part of the United Motors Corp.

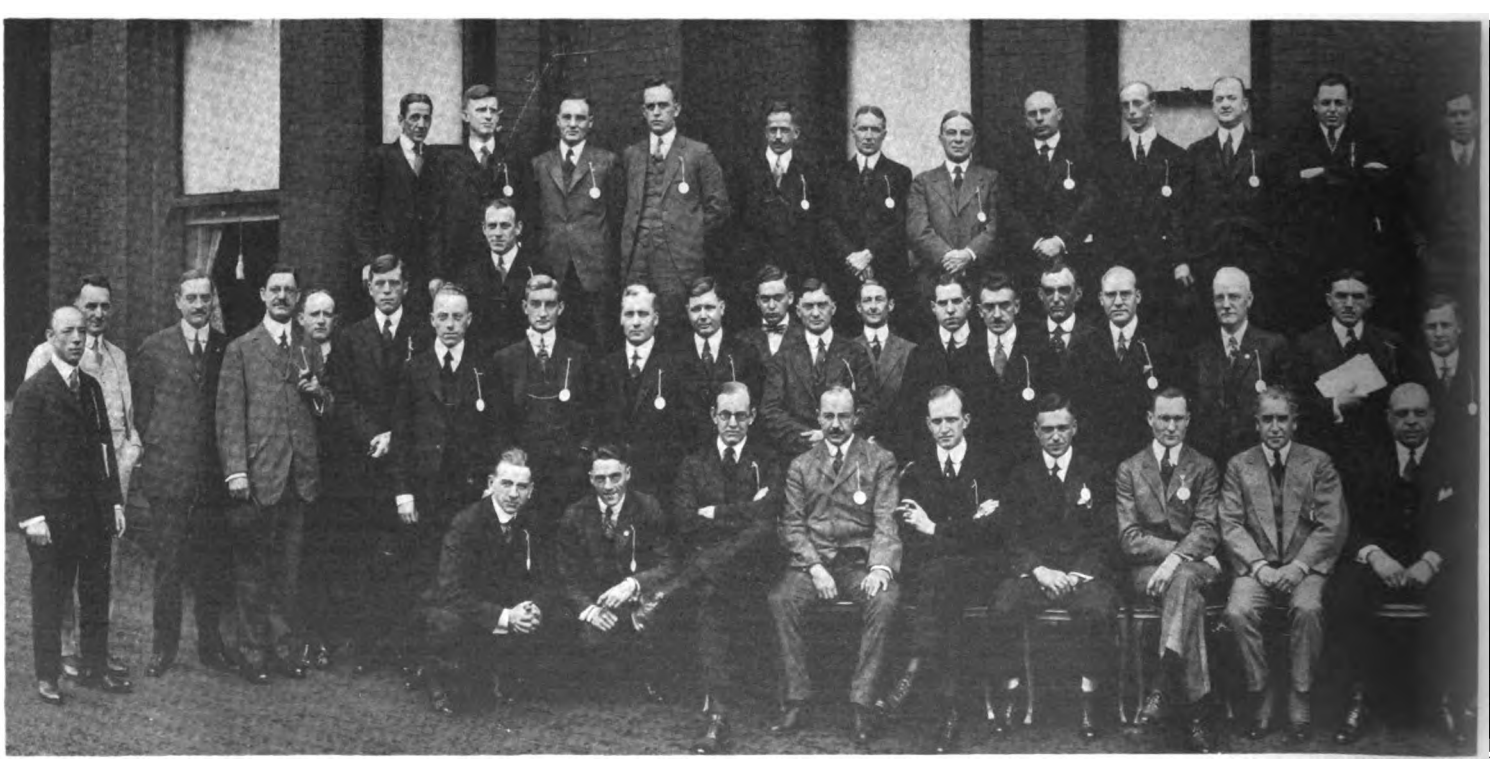
M.A.M. Calls Credit Men Into Conference

Proposes to Expand Work of Its Credit Bureau—Listens to Talks on Business

CLEVELAND, Oct. 18—The Motor & Accessory Manufacturers, Inc., today held the first meeting of its credit managers. The object of the convention was to acquaint the managers with one another and to lay plans for the extension of the work that has been under way for some time by the association's credit department. The foundation of the work has been well laid and one of the great essentials for greater development is co-operation. Other meetings will be held regularly in different cities to be chosen later.

On this occasion the managers were the guests of Cleveland members. President C. W. Stiger is absent on government war work at Washington. The credit men ate together at lunch and held a banquet in the evening at the Hollenden. The principal addresses were by Roy D. Chapin of the Hudson Motor Car Co., R. M. McConnell, Firestone credit manager; H. H. Merrick, general credit manager for the Armour interests; J. H. McComb of the Crucible Steel Co. of America. In addition to the idea of developing credit work, the convention devoted considerable time to business conditions of the future. One hundred and thirty-five men were present.

Others present were: L. D. Lyons, general manager Westinghouse Electric & Mfg. Co.; M. A. Monyhan, S. R. Wilhelmy and R. D. Mock.



THE MOTOR AND ACCESSORY CREDIT MANAGERS IN SESSION AT CLEVELAND—The front-row president of the Fisk Rubber Co. He presided. Treasurer L. M. Wainwright of the M. A. M. sits in the is F. R. Wilhelmy, chairman of the Credit Committee. Back of

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Maxwell Raises Price and Changes Its Truck

Body Selection More Flexible—Prices Graded Upward About $150

DETROIT, Oct. 22—The Maxwell Motor Co. has increased the prices of the Maxwell truck for 1918, has added a new body style and made two slight mechanical changes. The prices are now $865 for the chassis, and $995 for the screened express body. The prices were formerly $760 for the chassis and $845 for the screened express. The Maxwell truck body line is now standardized so that it is possible to build up practically any kind of a body by means of the combination box and stake types whereby the stakes are set up inside the flare on the box body. The complete line of bodies now embraces four types by means of this standardized form of design, the express canopy at $995, combination box, $915; combination box stake at $950, and the stake gate body at $955. The chassis with cab and windshield is $900. The mechanical changes are slight, being merely an increased volume of cooling area and a change in the reduction on low gear. This has been raised to 34 to 1, whereas it was formerly 21 to 1. The new reduction allows of considerable more power application for handling heavy loads in hilly country.

Studebaker Debt $9,000,000

NEW YORK, Oct. 23—The financial condition of the Studebaker Corp. shows improvement. Its floating debt stands at about $9,000,000. This figure compares with total bank loans of $13,231,520 as of July 1, a condition which was an important factor in the reduction of the dividend from a 10 per cent per annum basis to 4 per cent in August. By the end of this year the loans will be down to about $5,000,000, according to present plans of the management. The company is expected to earn about $5,500,000 this year, or 16 per cent on the common stock.

K. C. Show In Convention Hall

KANSAS CITY, Oct. 23—The 1908 Motor Show will be back in Convention Hall instead of the J. I. Case Building where it has been held for the past two years. The directors of the Kansas City Motor Car Dealers' Association state that the reason for this is the better scenic possibilities that Convention Hall affords. The show will be held the week of February 11 and a new scheme of erecting a larger balcony, extending out over the arena floor will provide space for at least seventy-five additional exhibits and furnish more floor space than the Case Building affords.

Trustee for Detroiter

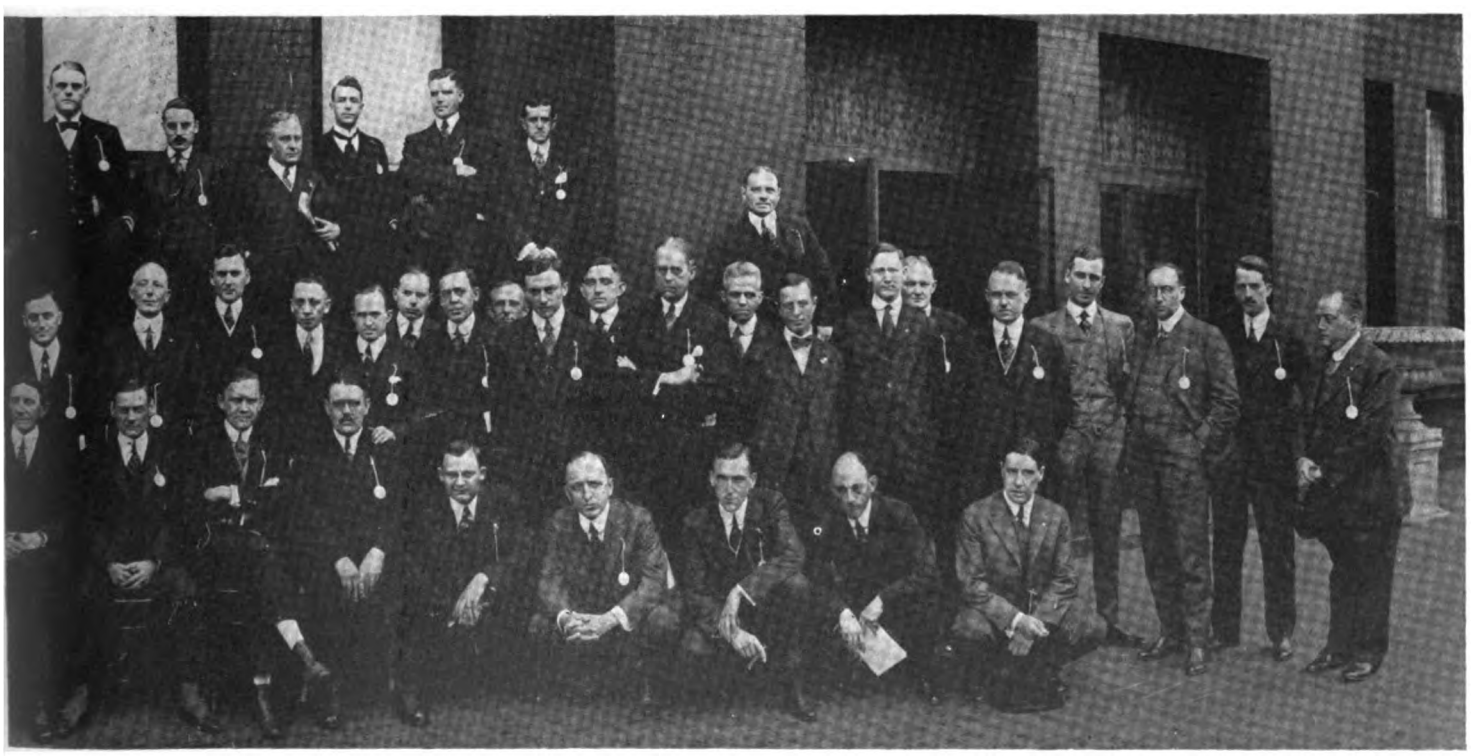
DETROIT, Oct. 23 — The Detroiter Motor Car Co. is being held by the Security Trust Co. as trustee for the time being. At present an inventory is being made and the Security Trust Co. will act in its present capacity either until new capital is obtained and a reorganization affected, or until the company is sold to satisfy stockholders. Production is being continued in a limited way, about 12 cars being made in the past 2 weeks. The service organization is being maintained.

Coast Rural Buying Offsets City Slump

Used Car Situation Not Good, Says Bradfield—More Fixing Up Now Being Done

CHICAGO, Oct. 23—H. C. Bradfield, representing the King, has just returned from a 2-months business trip on the Pacific Coast and reports retail conditions greatly improved in the sale of motor cars to farmers. Retail business in the cities, with the single exception of Seattle, which is experiencing a great boom in shipbuilding, is very quiet. Owing to the good wheat crops around Spokane, as well as the mining activity in Idaho, country sales are heavy. Retail business in San Francisco has been poor due to labor troubles, but conditions are easing up. Business in San Joaquin valley is the best it has been for some time due to good crops and oil production. Phoenix, which is the critical point of Arizona, is experiencing good trade, due to great mining activities. Dealers have sold 2875 cars in the state between July 1 and October 1.

Bankers are generally tighter with money on the entire Pacific Coast. In all Pacific Coast cities the used car situation is not favorable. San Francisco dealers are doing more fixing up of used cars before attempting to sell them. The used car business has hurt the entire motor car business in the cities and the coast dealers that are making good are those who are going into the country and building up the trade with the farmers in outlying sections.



man at the right on the left-hand page is E. H. Broadwell, 2d vice-president of the association and vice-front row at the left side of the right-hand page. Next to him is Manager L. M. Bradley. On Bradley's left Wilhelmy is Credit Manager A. C. Bagley of the M. A. M.

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Crow Brings Out New Line of Five Models

Five-Passenger at $935 and Several De Luxe Designs Are Part of Layout

ELKHART, IND., Oct. 20—The Crow-Elkhart Motor Co. will have five models in its new line. These are a five-passenger touring car at $935, a four-passenger DeLuxe cloverleaf roadster at $995, a five-passenger DeLuxe touring car at $995, a convertible coupe at $1,195 and a convertible sedan at $1,275. Wire wheels are $100 extra on all models. These new models will be styled series K and deliveries are being made to dealers.

Though the chassis is practically unchanged the cars are improved and refined. The principal elements are a unit power plant with a 3½ x 5 engine and Borg & Beck clutch. Thermoid flexible universals are used. A Zenith carbureter is fed from a Stewart vacuum tank and the electrical equipment is a two-unit Dyneto system, with Willard battery and Connecticut ignition. The wheelbase is 114½ in., wheels being shod with 32 x 3½ in. tires. Rear springs are elliptic.

Westcott Prices Advanced

SPRINGFIELD, OHIO, Oct. 19—The prices of all Westcott cars advanced Oct. 31 as follows:

Model	Old Price	New Price
Seven- or Five-Pass. Touring	$1,790	$1,940
Four-Pass. Touring Roadster	1,790	1,890
Seven- or Five-Pass. Convertible Sedan	2,690	2,790
Four-Pass. Convertible Coupe	2,690	2,790

Fulton Truck Improved

FARMINGDALE, L. I., Oct. 20—The Fulton Motor Truck Co. has made public the details of an improved 1½-ton truck to be styled model F-X, and selling for $1,420. It has a 3¼ x 5 four-cylinder L-head engine designed to eliminate vibration and utilize low gravity fuels. The carbureter is a Carter and ignition is supplied by a Dixie high tension magneto with manually-controlled advance. Principal transmission elements include a Borg & Beck clutch, a Russell internal-gear axle of a heavier type, a new type front axle with heavier spindles and heavier 11-leaf springs. Other improvements include a re-location of the foot throttle, adjustable stops on the axle to limit steering action, double control on the steering column with a lower wheel, the re-location of the starting crank, the placing of the brake rods inside the frame, the adoption of screw hood fasteners, a new radiator support and a new endless fan belt.

Seeger Completes Organization

MILWAUKEE, Oct. 20—The Seeger Mfg. Co., which some time ago established a plant at 1001 Thirtieth Street, Milwaukee, for the manufacture of a coal-burning heater for private or small garages, has incorporated its business under the same style under the laws of Illinois, with a capital stock of $7,400, all of which is represented by the works in Milwaukee. The main offices are at 175 West Jackson Boulevard, Chicago. F. G. Hudson is secretary of the company.

1788 Jordans in First Year

CLEVELAND, Oct. 20—The Jordan Motor Car Co., which started production in September, 1916, has made its first annual report. During the first year it sold 1788 cars at a valuation of $3,189,600. This was accomplished on a working capital of $300,000. The Jordan company has on hand a sufficient number of orders for immediate delivery to keep the factory going at top speed for at least 60 days.

Overland's New $500 Car Out Next Summer

Materials Situation and Production Demands Make Earlier Output Impracticable

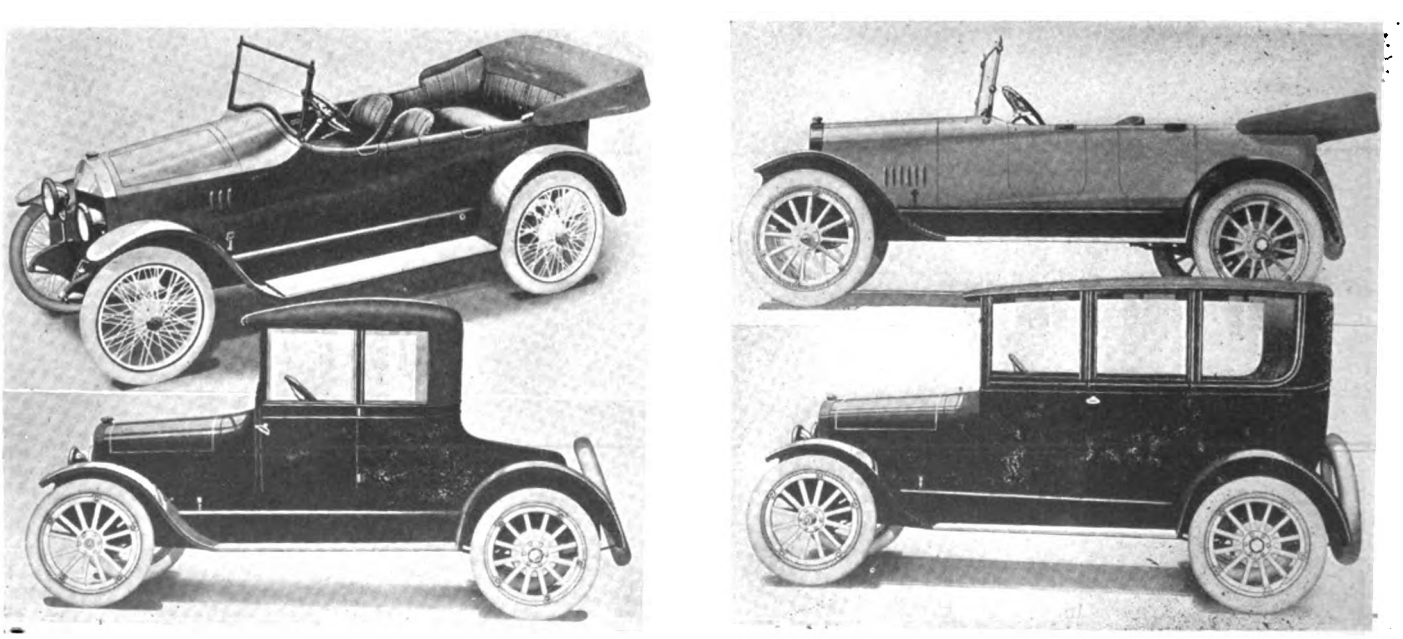
TOLEDO, Oct. 20—The new light model of the Willys-Overland car, announced in a previous issue of MOTOR WORLD, will not be in the hands of the public until the summer of 1918. The car is designed to be produced in quantities, and because of the peculiar difficulties of the time in getting material and machinery, the delay in getting into production is necessitated. As it will be a small car, in the low price class, there will be no interference or competition with the present models, and it will meet an entirely different demand.

Dodge Bros. Up $50 to $85

NEW YORK, Nov. 19—The new price of Dodge Bros. roadster and touring car is $885 and the sedan and coupe $1,350. The prices are effective Nov. 1. This is an advance of $50 on the open and $85 on the enclosed models.

Victor to Make Wire Wheels

KALAMAZOO, MICH., Oct. 17—The Victor Wire Wheel Co. which has organized with an authorized capital of $500,000 has secured an option on 10 acres of land in the center of the manufacturing district and will erect a factory in the near future. For temporary use a plant has been leased and production on a large scale will begin at once. This company will manufacture a complete wheel, including its own patented Q. D. rim, hubs, spokes and nipples.



CROW'S NEW LINE—Upper left, De Luxe 5-pass. touring, $995; lower left, convertible coupe, $1,195; upper right, 5-pass. touring, $935; lower right, convertible sedan, $1,275. Wire wheels are $100 extra

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Texas Gas Refineries Being Much Enlarged

Production Has Increased and with Greater Refining Facilities Output Record Is Expected

AUSTIN, TEX., Oct. 19—Besides the large increase of crude oil production that has taken place in Texas during the last few months, there is an unusual amount of activity in the enlargement of refining facilities. It is assured that the gasoline output of this state for the present year will greatly exceed that of any former twelve-months.

One of the recent transactions was the purchase by the Humble Oil Co., Houston, of the refinery of the Dixie Oil Co. at San Antonio. The present capacity of the acquired plant is 1800 barrels daily. It is stated that this capacity will be greatly enlarged and probably more than doubled by the building of additional stills and installation of necessary equipment.

The Producers' Oil Co. is making preparations for the enlargement of its refinery at Gainesville. It has taken an option on 800 acres of land situated adjacent to its present plant there and will soon begin the building of additions.

The Petroleum Refining Co., which is building a new refinery on the ship channel near Houston at a cost of about $20,000,000, expects to have the plant finished and ready for operation about December 1. J. S. Cullinan, former president of the Texas Co., is at the head of the Petroleum Refining Co. The company owns large producing interests in the Humble, Goose Creek and Damon Mound fields.

The Sinclair-Gulf Corp., which has obtained right of way for its proposed pipe lines from producing fields to the site of its proposed large oil refinery to be built upon the ship channel near here, will probably not begin the construction of the plant for some time yet. It is stated that it may wait until the close of the war before doing so.

Vesper Plays Host

ST. LOUIS, Oct. 22.—F. W. A. Vesper, wholesale distributer, and H. G. Hurd, retail dealer, were hosts to the employees of the Vesper-Buick Auto Co. at a housewarming dinner in the new building. The tables were spread in the storage room, which was later cleared for dancing. The favors were distributed from an inclosed car which was driven around the dining-room.

Columbus Holds a Show

COLUMBUS, Oct. 20—One of the most complete shows ever held in Columbus opened in one of the large machinery buildings on the Ohio State Fair Grounds October 18 to run to Oct. 27, in conjunction with the National Dairy and Horse Show. Displays were made by practically all of the Columbus dealers and also by factories, when agencies were not placed in Columbus. According to dealers, the outlook for business during the winter and early spring is good. Despite the attention given to preparations for the war, people are spending a lot of money on automobiles. In fact all agencies are behind on orders. Among the farmers, especially, are the prospects good. Crops are excellent and with the high prices prevailing a goodly number of motor cars will be sold in rural sections.

COLORADO PLANS CONVENTION

DENVER, Oct. 20—A convention of motor car and accessory dealers from all parts of Colorado is a new feature planned for the show to be held in the Denver Auditorium November 12 to 18. The show will be under the auspices of the Automobile Trades Division of the Denver Civic Association, and managed by George A. Wahlgreen, veteran manager of Denver shows and manager of the big dealers' event at San Francisco last winter.

Forty-five motor car dealers will display approximately 120 cars, and there will be about 50 accessory exhibits. The entire 17,000 sq. ft. of floor space has been contracted for, and some of the dealers would have subscribed for more space if it had been available. The event promises to furnish by far the largest and most varied exhibit ever held in this section of the country, and a heavy attendance is expected from both Colorado and also other parts of the Rocky Mountain territory.

Ross May Move to Coast

DETROIT, Oct. 17—Permanent receivers are now being appointed for the Ross Automobile Co. and definite announcement will be made in about a week. Material change in the plant is expected, and there is a possibility that the company will move to the Pacific coast and concentrate on an eight-cylinder model instead of the six-cylinder model, as announced some time ago.

Fruehauf Trailer Enlarges

DETROIT, Oct. 19—Due to an increased demand for trailers, the Fruehauf Trailer Co. has made several organization changes to care for the new business. August C. Fruehauf is general manager, H. C. Fruehauf, assistant, H. G. Brown, sales manager, and E. L. Vosler, auditor. Brown was formerly with the Ford Motor Co., and Vosler with the Aluminum Castings Co. In the past six months the trailer business has increased about 50 per cent, mostly in trailers of the heavy duty type. A capitalization change has been made from $75,000 to $100,000 and a new factory is under consideration. Two other trailer companies have been absorbed; the Michigan Auto Trailer Co. and the J. H. Semi-trailer Co., both of Detroit, and both manufacturing light semi-trailers for Fords.

St. Louis "Open Week" Brought to a Close

Dealers Not on the Row Given Space by Those Who Were—Trucks, Too, Exhibited

ST. LOUIS, Oct. 20—An exhibit of fall and winter cars closed last week, 47 firms having held "open house" to all visitors to view the closed and semi-closed cars made by 54 companies for the season of 1917-18.

The week's activities were under the direction of the St. Louis Automobile Manufacturers' and Dealers' Association, but only those members who have been able to obtain winter model cars participated. The exhibit was on Motor Row, and exhibitors whose salesrooms are not located on Motor Row were allotted space in salesrooms of members more favorably located.

The plan is similar to that followed last year, when it was called "open week," but that name has not been used this year. In all of the publicity the activities have been referred to as "closed car exhibit."

Several of the precedents of last year have been followed. A common form of sign has been adopted, and each firm distributed lists showing where each car was exhibited and by whom. All salesrooms were open until 10:30 p. m.

The salesrooms were tastily but not elaborately decorated and special lighting was arranged by most of the dealers. The general plan was less elaborate than last year, because the event was more of a local nature. Last year the exhibit was held in connection with the "fall carnival," which attracts thousands of visitors to the city, but this year the carnival was not held and the Automobile Association has not attempted to attract visitors for their exhibit, although considerable advertising has been done through the local trade territory. Several sub-dealers meetings were arranged for the week, as in several cases this is the first showing of the new models here.

A new feature was the truck exhibit. Arrangements were made with the city to close Garrison Avenue, which is midway of Motor Row, for a block north and south of the Row, and special lights were installed. This space was opened to trucks. H. L. Sutton, of the show committee, was in charge of this exhibit, and practically every truck dealer in the city took part. The expense of the lighting fixtures will be prorated among the exhibitors. During this discussion the truck dealers became so engrossed in their community interest that it is likely that an association will be organized.

DETROIT, Oct. 19—The Sampson Automobile Co. has leased a three-story building, 165 by 250 ft., at 1113 Gratiot Avenue, to be used as a display and salesroom.

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Prominent Tradesmen Assume New Duties

Resignations and Promotions Place Workers in New Places

O. H. Claflin will represent the Ohio Happy Farmer Tractor Co., Bucyrus, Ohio, in northeastern Ohio. He was with the Olds Gasoline Engine Co., Lansing, Mich., for 8 years and for 5 years was with the Domestic Engine Co., Shippensburg, Pa.

E. E. Gerlinger has become Pacific Coast sales manager of the Selden Truck Sales Co., Rochester, N. Y. He was formerly vice-president and general manager of the Gerlinger Motor Car Co., Portland, Ore.

George C. Morgan, formerly of the Toledo branch of the Willys-Overland Co., has been promoted to the general branch department at the factory. Morgan is succeeded by John Yoke, formerly assistant sales manager of the Smith Motor Truck Co.

B. F. Winkelman, formerly with the Chalmers agency in Philadelphia, has become district supervisor of the Liberty Motor Car Co.

H. S. Daniels has become advertising manager of the Dort Motor Car Co. For some time he has served jointly the Dort Motor Car Co. and the Dooley-Brennan Co., but has now severed his connections with the latter organization.

R. M. Thompson, formerly with the Schillo Motor Sales Co., Chicago, left Oct. 15 for Toronto, Canada, to join the Royal Flying Corps.

John T. Boone, formerly chief engineer and factory manager of the Disco Electric Starter Corp., has opened an office at Detroit as consulting and designing engineer. **Gerald H. Allen**, engineer and factory manager of the Detroit Starter Co., is associated with him, but will not take an active part in the work, retaining his present position.

G. E. McLaughlan, who for the past 16 years has been connected with the Pere Marquette railroad at Toledo, has been appointed traffic manager of the Dort Motor Car Co., Flint.

George C. Conn, formerly traffic manager of the Pere Marquette, has been appointed traffic manager of the Buick Motor Co.

F. H. Akers has become assistant sales manager of the Reo Motor Car Co. For five years Akers was direct factory representative in Middle West territory.

Lloyd P. Jones, former sales manager of the Federal Brass Works, has been appointed vice-president and general manager of that company.

T. J. Little, Jr., has been appointed research engineer of the Cadillac Motor Car Co. He will direct all research work, have charge of experimental laboratories and carbureter development, etc. For the past year Little has been directing special engineering investigation, and was formerly chief engineer of the Welsbach Co.

R. L. Newton, formerly district manager of the Willys-Overland Inc., has resigned to become manager of the wholesale department of the Simons Sales Co., Overland distributors, Detroit.

Wyman C. Parker, secretary, treasurer and general manager of the Parker Rust Proof Corp., has resigned. He will, however, retain his stock interests and will continue as director of the corporation.

Rodney W. Day, formerly at the Buffalo, N. Y., branch of the Fisk Rubber Co., has been made manager of the Erie, Pa., branch.

Richard S. Griefen has been appointed manager of the Milwaukee branch of the Anderson Electric Car Co., Detroit, to succeed A. E. Jenny, resigned. The headquarters of the Milwaukee branch are at 532-534 Jefferson Street.

Frank R. Bacon, president of the Cutler-Hammer Mfg. Co., Milwaukee, has been promoted from captain to major in the United States Reserve (Industrial) and detailed to have general supervision over the execution of Government contracts for the manufacture of machine guns at New Haven, Conn. The work will require his entire time and Major Bacon therefore has temporarily relinquished active connection with the Milwaukee concern.

C. F. Gilmour of Buffalo will be the vice-president and general manager of the newly-formed C. F. Gilmour Co., Inc., which will handle the Dodge car in Syracuse and vicinity with offices at 412 South Warren Street, Syracuse. Gilmour was with the J. A. Cramer Co. of Buffalo for three years.

F. A. Law, Hartford, Conn., who recently severed his connection with Eastern Motors, Inc., at New Britain, Conn., where he was chief engineer and designer, has accepted a berth with the Hartford Buick Co., Hartford, Conn., to take charge of the Owen Magnetic and Baker Electric department.

Howard D. Graves, Hartford, Conn., secretary of the Capitol City Automobile Co., has resigned and joined the Hartford Packard branch.

A. W. Farrell, St. Louis, for a long time connected with Studebaker sales in that city, has become manager of the used car department of the Wilson Motor Car Co., Haynes distributer.

E. R. Shade, for 3 years superintendent of the repair department of the Apperson factory, has been made service manager for the J. W. Leigh Motors Co., St. Louis, Apperson distributer.

R. H. Williams, Studebaker branch manager, has been given charge of part of northwestern Ohio in addition to the State of Michigan.

Benton G. L. Dodge has returned to the position of advertising manager of the Standard Parts Co., succeeding J. A. Braden, formerly of Akron.

George L. Brush, Canadian manager for the Harroun Motor Corp., has resigned to join the Elgin Motor Car Corp. of Canada.

Louis M. Baker is sales manager of the United Motors Service, Inc., official service representative of the Delco, Klaxon and Remy electrical companies, with headquarters at 3066 West Grand Boulevard. Baker was formerly western representative in Detroit for the Standard Steel Springs Co. of Coraopolis, Pa.

P. R. Finch is district representative of the United States Motor Truck Co. and will doubtless be assigned to the Chicago territory.

C. S. Crawford is director of purchases for the Holley Bros. Co., having resigned from the Kelsey Wheel Co.

Frank W. Pilling is district manager of the Hupp Motor Car Co. for the Detroit and middle west territory. Pilling has been selling automobiles for fourteen years, having been assistant sales manager for the K-R-I-T Motor Car Co. and was most recently district supervisor for the Liberty Motor Car Co. in the East.

Harold I. Ball, formerly manager of the Commercial Automobile Co., Princeton, W. Va., distributer of Haynes cars, has bought out the interests of his partners and taken over the Haynes contract, which will be handled under the firm name of Harold I. Ball, Distributer.

Auguste Chouteau, financial officer of the Bittel-Leftwich Co., St. Louis, and five other accessory companies of that city, has departed for Camp Funston to join the National Army. Chouteau is a descendant of one of the original settlers of St. Louis, is wealthy, married and has two children, but he declined to claim exemption. His business associates sought to have him exempted but failed.

Russell E. Gardner, Jr., salesmanager, and **Frederick W. Gardner**, factory manager of the Chevrolet Motor Co. of St. Louis, have enlisted in the navy as ensign and engineer. They are sons of Russell E. Gardner, chief owner of the Chevrolet Motor Co. of St. Louis.

C. E. Scheible has become connected with the New York branch of the Thermoid Rubber Co. Previously he traveled the western part of New York State for the Fisk Rubber Co., and from now on he will represent the Thermoid company in the same territory.

A. R. Hodge, who previously represented the United States Rubber Co. in the South, has joined the staff of the New York branch of the Thermoid Rubber Co.

E. D. Stewart is sales manager of the Williams Motor Sales Co., Dodge Brothers distributers in Springfield, Mass. Stewart was formerly a member of the sales department and previously traveled for the Maxwell Motor Co.

Fred C. Gumper, purchasing agent of the Ross Automobile Co., has resigned and has made no announcement of his future connections. He was formerly connected with the F. B. Stearns Co. of Cleveland, with the Weston-Mott Co. at Flint, and with the Ford Motor Co.

J. R. Van Cleve is in charge of the service department of the Dort Motor Car Co.

William Hickox has been appointed Eastern district sales manager for the Cole Motor Car Co. His headquarters will be in the U. S. Rubber Building, New York.

Charles H. Gresslee has been appointed to the selling force of the Selden Truck Sales Co., Rochester. He will have headquarters in Cincinnati and cover Southern Ohio, Indiana, Kentucky and West Virginia.

L. L. LeBlond has joined the selling force of the Selden Truck Sales Co., Rochester. His headquarters will be in Kansas City and he will cover Missouri, Kansas, Nebraska and part of Iowa.

Russel Axle Expanding

DETROIT, Oct. 20—At a special meeting of the stockholders of the Russel Motor Axle Co. the capital stock of the company was changed from $500,000 of common and $100,000 of preferred to $750,000 of common stock only. There was outstanding $495,000 of common stock and $39,000 of preferred. The $39,000 of preferred has been retired at par. The stockholders were offered rights to subscribe to the $155,000 of new stock at par, and by October 31 subscriptions for this new stock will have been paid in.

Philadelphia Service Station for White

CLEVELAND, Oct. 20—The White Co. has completed plans to erect a $175,000 service station at Erie Avenue and 20th Street, Philadelphia. The building will cover a plot 215 x 270 ft., and will include offices, stock room, lockers and space for storing trucks. The plans were prepared by the Watson Engineering Co.

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New Angles on the 3% Tax

Treasury Department Gives Additional Points on Details as to How the Tax Is to Be Applied and Collected—Official Rulings in Six Weeks

NEW YORK, Oct. 23—The Treasury Department, Washington, has made a number of additional preliminary rulings concerning the war revenue tax on motor vehicles, amplifying and otherwise explaining the rulings obtained by the National Automobile Chamber of Commerce and published last week in MOTOR WORLD.

The new rulings do not materially alter the others and cover such specific points as the method of charging the tax to the consumer, the floor tax, the tax on used cars, the method of handling taxes on cars sold on conditional bills of sale, and chattel mortgages.

Though these rulings, which are the result of interviews with Deputy Commissioner G. E. Fletcher of the Internal Revenue Office; E. C. Johnson, Solicitor of the Internal Revenue Office; P. S. Talbert, Chief of the Law Division, and Dr. Gilbert Brenizer of the War Tax Division, are only preliminary and subject to change, it is expected that they will prevail.

It is hoped that by the end of November when taxes must be paid, official rulings will be announced. Following are the preliminary rulings, the phrases in italics being new:

1—Manufacturers selling new cars and trucks on and after Oct. 4, 1917, pay a tax of 3 per cent on the manufacturer's selling price. This is on the price received by the manufacturer for the car and not the list price, unless actually sold for that.

2—*If the manufacturer passes the tax on, the Treasury Department believes that the price the manufacturer gets for the car should include the present price of the car plus the tax collected. For example, if the maker sells the car for $800 plus the war tax of $24, making the selling price $824 with no reference to the tax, the Government will assess the tax of 3 per cent on $824. For the manufacturer to receive the full $800, plus the war tax, his billing price would have to be $824.74, of which 3 per cent of $24.74 would be paid to the Government. The maker's price therefore would be 97 per cent of the total charge to the customer. This appears to be a tax on a tax, but the Treasury Department rules that the tax is on the gross amount the manufacturer receives and the tax is part of that amount, even though later paid over to the Government.*

3—*Wholesalers or combined wholesalers-retailers holding new cars or trucks for sale at the opening of business, Oct. 4, must pay 1½ per cent on what is paid to the manufacturer for them. However, no tax is assessed on cars or trucks sold and delivered prior to May 9, 1917, where the title has been retained as security. Dealers who do both wholesale and retail business must pay a 1½ per cent tax on all new cars held on Oct. 4 whether subsequently sold at wholesale or retail.*

4—*Used cars are not taxable, whether held by manufacturers or wholesalers.*

5—Chassis are considered automobiles and are taxed accordingly.

6—*If the manufacturer, wholesaler or wholesaler-retailer sells a taxable car or truck to a dealer under contract made prior to May 9, 1917, then no matter what the contract may say about taxes, the dealer who buys the car or truck must assume the tax and pay it to the seller who will in turn pay it to the Government.*

7—*The manufacturers' tax accrues when the car or truck is sold, and this means when the title to the merchandise passes to the buyer, whether by the physical transfer of property or the bill of lading representing it. Therefore, the title passes when the merchandise is delivered to a carrier who is the agent of the buyer or the bill of lading is put in the mail or delivered to a bank.*

8—*A car delivered on a chattel mortgage is a sale when the title passes and not when the mortgage is paid off.*

9—Cars or trucks sold to the Government probably will be relieved from the tax though the person making the sale must make application to the Treasury Department for an order releasing the article from the tax. Cars and trucks sold to foreign governments are taxable.

10—Branch houses, if distinct and separate corporations from the manufacturers' corporation, do not subject the manufacturer to taxes incurred by the branch.

11—Where extras are shipped with a car and make one sale the manufacturer is taxed on the full amount, but where cars are shipped standard and extras added these would not be taxed.

12—The Treasury Department does not look with disfavor on the plan of averaging the tax so that the amount paid by the ultimate buyers of a certain type of car shall be the same, irrespective of different discounts given various classes of dealers.

13—*Wholesalers should make returns on the floor tax with checks covering the proper amount before Nov. 2, 1917. The payment may be extended to a date not exceeding 7 months from the passage of the act upon the filing of a bond for the payment which must not be less than double the amount of the tax and in no case less than $1,000. Liberty Bonds are acceptable.*

14—*Manufacturers should make reports with checks for the proper amount on their October sales any time before the end of November, making monthly reports thereafter.*

Increase for Willys-Overland Oct. 31

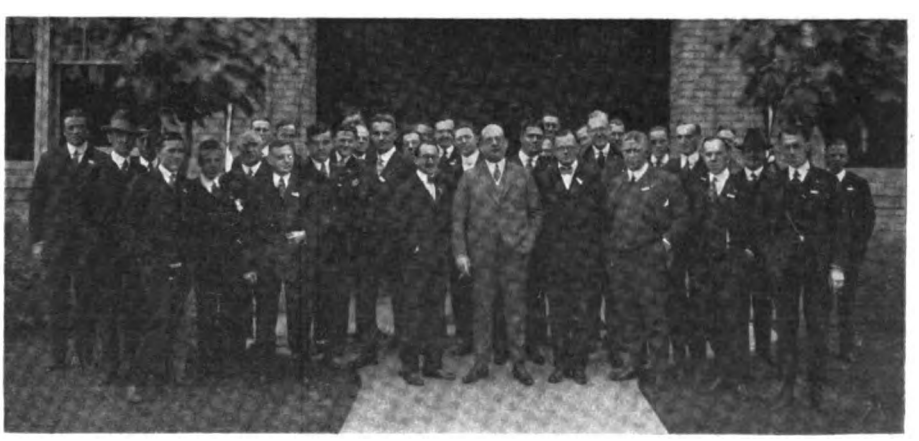
NEW YORK, Oct. 23—The Willys-Overland Co. will announce another increase this month on Oct. 31. This increase will range from $50 to $100 on all its models. Prices rose from $20 to $35 on Oct. 3. The Model 90 price went up $20; Model 85-B4, $25; 88-4, $35; 88-8, $35, and Model 89, $25.

Essex Leases a Plant

DETROIT, Oct. 22—The Essex Motor Co., which was recently incorporated by officials and stockholders of the Hudson Motor Car Co. for the purpose of manufacturing a light car, has taken a three years lease on the old No. 5 Studebaker plant. This building fronts on Franklin Avenue and is approximately 200 by 200 ft. It has three stories and about 60,000 sq. ft. of floor space. It is expected that the plans and specifications of the new Essex car will be announced in a few weeks. Already Hudson dealers throughout the country are making applications for agencies and contracts.

Booth Out of Scripps-Booth—Other Changes Coming

DETROIT, Oct. 22 — Clarence H. Booth has resigned as president of the Scripps-Booth Corp., and no definite information is available as to whom his successor will be. On reliable authority it is stated that W. H. Little, at one time head of the Sterling Motor Co., is vice president, and that the Scripps-Booth Corp. is to pass into the control of large and influential automobile interests. In the course of about three months, it is expected that new models incorporating several radical changes will be coming through production, and that a revision of prices will be made at that time.



Dealers and distributers of the Liberty Motor Car Co. of Detroit gathered from all over the United States and Canada for a general business conference at the factory recently. The conference extended over two days. Those who attended joined in an interchange of ideas and the new Liberty two-passenger roadster was exhibited

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Used Car Show Only Solution to Problem

This Is What St. Louis Dealers Think After Investigating—Other Plans Considered

ST. LOUIS, Oct. 19—At the monthly meeting of the St. Louis Automobile Manufacturers' and Dealers' Association Chairman I. G. McNiece, of the Used Car Committee, reported on its investigations of the used-car problem, recommending that the situation be left as it is for the present. The committee started its work with the general suggestion that something should be done, and that this something probably should be a central used-car depot.

The members of the committee—I. G. McNiece, chairman; J. E. Newell, Webster Colburn, R. W. Leach, P. H. Brockman and George Weber—are accounted among the heaviest traders in St. Louis. The only aid in sight, according to the committee, is a used-car show.

The following memorandum was filed with this report as explanatory, being personal comment by McNiece:

"The General Appraisal Office plan had to it this very prejudicial angle: It necessitated the prospective new car buyer who entered a salesroom leaving the new car salesroom to go to the appraiser's office with his old car. There was no assurance that he would again return to the new car dealer's salesroom. In other words, it necessitated chasing out of our salesrooms prospective business that had come into them.

"The Clearing House plan: This would require large floor space with a rental proportionately large. It would also require heavy expense for competent managerial and sales help, and it in no way assured each dealer that his particular cars would get the selling attention to which he thought they were entitled. The result would be dissatisfaction.

"Any practice between dealers to post each other on trade allowances would be a very difficult permanent operation, for the reason mainly that it is extremely difficult to believe that in no case would any one dealer knowingly make an allowance greater than that made by the dealer posting him. Also after dealer No. 1 had fixed a price it would practically obligate dealer No. 2 to quote the same price. If he quoted a lower price, the prospective buyer's inclinations would strongly favor dealer No. 1.

"These are just a few of the reasons that forced the Used Car Committee to the belief that each dealer will have to handle the used-car end of the business in his own individual way. I might say a word or two here that would prove helpful to a few dealers, and that word is this—stop buying used automobiles.

"By that I mean, instead of giving the purchaser of a used car precedence over the sale of your new automobile, see to it that the owner of the used car rides in and is thoroughly sold on your new automobile before you discuss in any way—even approximately—the allowance on his old one. By so doing you will instill into the buyer a desire for your new car and make him think less of his old car, with the result that you will probably be able to buy his old car at your figure."

Wilkins Heads Portland Dealers

PORTLAND, ORE., Oct. 20—Two meetings were held last week by the Dealers' Motor Car Association of Oregon, the annual election on Monday and the "get-together" of the truck bureau of the association, which was held on Friday. M. O. Wilkins was re-elected president-manager at an increased salary, and Charles M. Menzies, sales manager of the Northwest Auto Company, was also re-elected secretary-treasurer of the association. H. E. Johnson of the Koehring Machine Company, who is head of the truck bureau of the association, was named vice-president, and the following dealers were elected on the arbitration board: Howard M. Covey, chairman; A. B. Manley and Dell Wright.

More Money For Harroun

DETROIT, Oct. 23 — The Harroun Motor Corp. has obtained in cash $650,000 from Kansas City interests which amount is being used for production purposes and which brings the liquid assets of the company including cash in bank and inventory up to $1,000,000. The value of the plant, real estate, machinery, etc., amounts to $1,250,000 or a total investment of $2,250,000. With this new capital it is expected to have a production of 25 cars a day within 30 days. The company has been in production since July manufacturing complete cars which have been delivered to dealers and distributers. Cars have been under test for 3 or 4 months. For some time the factory has been building motors to be ready for its production schedule which is now to be put under way. It is expected that production will be stepped up from 25 per day as conditions warrant. The factory was designed for a daily production of 80 cars.

To Police Ford Business

ST. LOUIS, Oct. 20—The St. Louis Ford Dealers' Association has been organized here and will take up the work of policing the Ford service, both as to car and accessory stations. The 10 agents here are members and the Association has been approved by the Ford factory sales organization. It is a part of the plan to inspect all accessories offered for sale for Ford cars and if they are not worthy to warn buyers of cars against them. Officers are Milton B. Strauss of the Lafayette Motor Car Co., chairman; C. H. Tevis of the Tevis Motor Co., vice chairman; William D. Walsh, Walsh Motor Co., secretary. Semi-monthly meetings will be held.

Must Save 1,500,000 Gallons of Gas a Day

Industry's Organizations Launch National Campaign to More Than Cover War Needs

NEW YORK, Oct. 23—The National Automobile Chamber of Commerce has fired the first gun in a nationally organized "Don't Waste Gasolene" campaign. Allied with the N. A. C. C. is the American Automobile Association, the Motor and Accessory Manufacturers and the Society of Automotive Engineers. Van H. Manning, chief of the Petroleum Division of the United States Bureau of Mines, is directly co-operating in the campaign.

"The one certain way to insure a sufficient supply of fuel for war needs," says General Manager Reeves, of the N. A. C. C., "is to eliminate waste." All authorities agree that there is an ample supply of crude oil for all needs if wastage is avoided.

It is estimated that the war needs of the country for army, navy and aviation branches will be 959,000 gal. of gasoline a day. The total daily gasoline production is 6,849,000 gal. Of this approximately 4,800,000 gal. are used by motor cars and trucks and the balance by motor boats, stationary engines and in other industries. The Bureau of Mines estimates that the following savings can be effected daily:

	Gal.
Tank wagon losses	7,200
Leaky carbureters	31,400
Poorly adjusted carbureters	240,000
Motors running idle	150,000
Wasted in garages	67,000
Saved by using kerosene in garages	108,000
Needless passenger mileage	897,400
Total	1,500,000

This total means a saving of 561,000,000 gal. a year, whereas our war needs are but 350,000,000 gal. a year, or less than two-thirds of what may be considered as wasted at present.

The N. A. C. C., co-operating with the Government, is preparing thousands of posters to be hung in salesrooms, garages and supply stations throughout the country. These give 15 ways in which gasoline can be saved.

Bearings Company Opens N. Y. Office

NEW YORK, Oct. 19—The Bearings Company of Pennsylvania, maker of bearings and the Gill piston ring, has opened a branch office in New York at 1864 Broadway. A complete stock of bearings is maintained. A sales agency has also been installed at 293 Halsey Street, Newark, N. J.

Minneapolis S. A. E. Office

MINNEAPOLIS, Oct. 20—The Minneapolis Section of the Society of Automotive Engineers has established an office at 541 Plymouth Avenue.

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Canada Buys 100,000 Cars

Nearly Five Times the Number Purchased in 1914—Has One Car for Every 50 Persons

MONTREAL, Oct. 19—After three years of war it is estimated that Canada this year is purchasing 100,000 new motor cars, almost five times as many as in 1914, and an increase of 85 per cent over the normal increase for 1913 and 1914.

It is evident, therefore, that Canada, with a population of slightly over seven and a half millions, possesses over 150,000 motor cars, which means that there is one motor car in Canada for every fifty of the population. Ontario is the leading province, with about 75,000 motor cars, or one to every thirty-three of population.

In addition to the actual manufacture of motor cars, there are a number of subsidiary industries affected by the phenomenal growth of the motor car trade. Each of these adds in a greater or less degree to the annual turnover, and it is probably safe to say that the aggregate trade created through the production and operation of motor-propelled vehicles in Canada for the year 1917 will amount to nearly $100,000,000.

Among the nations of the world Canada now occupies the third position with regard to the number of automobiles in actual use. Since the industry has come under the stimulus of war business, it bids fair to become, as it has become in the United States, one of the greatest factors in the industrial development of the country. There are now in Canada twelve motor car companies in active operation with an estimated output for the current year approximating in value $50,000,000.

The figures are authoritative and represent a truly significant situation when it is considered that the automobile was for a long time regarded as more or less of a luxury. The growth has been achieved despite the constant crusade for economy and the unending withdrawal of men, power and money from Canada during the past three years of war-time. In face of this, the undisturbed stability of the motor car market in this country can only be explained in one way, and that is that the motor car is more and more coming to be realized as a commercial necessity. The automobile has aided in the movement of troops, facilitated the transportation of war material, increased the efficiency of the farm, aided in the quicker movement of all things pertaining to business, and has been a great economic factor in the development of general business.

In making a comparison with the United States, the latest compilation of figures shows that there are fourteen States where there are fewer cars in proportion to population than there are in Ontario; and in making a comparison of figures it must be remembered that the initial cost of the automobile and upkeep cost is 42 per cent higher in Canada than in the United States.

Even the great State of New York, with its population in excess of that of all Canada, with the biggest city in the States and with many other hives of industry and prosperity, does not outdistance the Province of Ontario by any great degree, its ratio being one to every twenty-six people.

Western Canada, during the past two seasons, has proved a veritable gold mine for motor car agents, as the Western farmers are becoming more and more educated to the use of up-to-date facilities. Even British Columbia, with a thin population less than that of the city of Toronto, scattered over wide areas of mountainous country, has automobiles in the proportion of one to every 78 of the population.

Indicating the trend of the buying mind is the fact that fully 15,000 of the increase of 23,000 cars in Ontario were priced under $1,500, indicating that the public is going in for a small car with a high mileage and small tires now that prices of gasoline and tires have increased.

A conservative estimate of the amount of money invested in private cars in Canada has been placed at $135,000,000. The industry is still in its infancy. The growth of the motor car industry is truly significant, as indicated by the foregoing statistics. Canada has been a heavy importer of cars, tires and automobile parts from the United States. The following statistics taken from Government blue books are interesting. Figures are available only up to March of the present year. Since that time it is estimated by competent authorities that the increases have been greater than in any corresponding period.

From the United States, during the six years ending March, 1917, Canada's imports of automobiles amounted to $40,634,125, as follows: In 1912, $6,077,497; in 1913, $9,233,171; in 1914, $6,459,346; in 1915, $4,532,138; in 1916, $5,790,498; in 1917, $8,555,475. Note the big increase of imports of automobiles for 1917 over 1916.

From the United States, during the six years ending March, 1917, Canada's imports of automobile accessories amounted to $17,051,975, as follows: In 1912, $854,000; in 1913, $762,321; in 1914, $3,965,173; in 1915, $2,139,552; in 1916, $4,693,003; in 1917, $7,173,423. Note the big increase of imports of automobile parts for 1917 over 1916.

From the United States, during the six years ending March, 1917, Canada's imports of automobile tires amounted to $7,068,513, as follows: In 1912, $666,411; in 1913, $1,507,916; in 1914, $1,263,382; in 1915, $1,044,592; in 1916, $1,389,400; in 1917, $1,217,532.

Canada Registers 75,000 Cars

TORONTO, Oct. 19—Provincial revenue from motor licenses this year is expected to exceed $900,000. Returns to date show that 75,000 licenses have been issued compared with 50,000 last year. The increase in licenses has brought with it a gain in revenue of approximately $250,000.

Canadian Liberty Co.

WINDSOR, ONT., Oct. 18—The Liberty Motor Car Co. of Canada, Ltd., has been incorporated with a capital stock of $10,000 by Percy Owen, James F. Bourquin and Harland M. Wirth, all of Detroit, to manufacture motor cars, vehicles, accessories, etc.

Ford Canadian Profits $2,322,466

FORD, ONT., Oct. 18—The Canadian Ford Motor Co. profits were $2,322,646 on its capital stock of $7,000,000 in the fiscal year ending July 31, according to a statement issued here. This profit, added to a balance of $1,039,122 at the end of the preceding fiscal year, and a rebate of $18,813 on 1915 taxes, left a balance for the year of $2,445,139 after payment of $935,443 for 1916 and 1917 war taxes, cash on hand amounting to $2,066,455.93; accounts receivable of $1,307,825.35; $3,185,924.50 in plant accounts were included in the total assets of $12,510,130.72.

Paraffin from Mexico

WASHINGTON, Oct. 18—The first discovery of paraffin on this continent has been made in the State of Chihuahua, Mexico, not far from the American boundary line. The bed has been traced for ten kilometers in extent and analyses of samples show 93 per cent of the pure mineral. Petroleum with a paraffin base has also been discovered in the same region. It is pointed out that petroleum with a paraffin base prevails as to the greater portion of the oil produced in California, the southwestern portion of the United States, and also in Mexico. Steps have been taken to exploit upon an extensive scale these new discoveries in Chihuahua.

To Sell Drexel at Auction

CHICAGO, Oct. 19—The entire plant of the Drexel Motor Car Corp. will be sold at public auction by order of the United States District Court Oct. 24-25. The bankrupt inventory value is more than $400,000. The plant is fully equipped for making cars and includes a stock of parts and supplies, motors, bodies, etc., worth more than $200,000, according to the inventory. Harry B. Staver is trustee.

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Car Makers Watching Steel Price Fixing

President Approves Agreement Between War Industries Board and Steel Men

WASHINGTON, Oct. 18—There is some speculation as to whether the fixing of prices for additional forms of steel will have any immediate effect upon the automobile business. In many cases existing contracts will not be affected in any way, and most factories have bought for far ahead. As to future orders, if these are placed at the Government prices ruling to-day, it may prove that difficulties in getting delivery will add cost in some other way. The types of manufactured steel most used for automobiles, thin sheets and small bars of good quality metal, are largely unaffected by existing legislation.

The President has approved an agreement between the War Industries Board and the steel men, fixing the following maximum prices, which become effective immediately, and are subject to revision January 1, 1918:

Commodity		Price Agreed Upon
Blooms and billets 4"x4" and larger		$47.50 GT
Billets under 4"x4"		51.00 GT
Slabs		50.00 GT
Sheet bars		51.00 GT
Wire Rods		57.00 GT
Shell bars	3" to 5"	3.25 per 100 lbs.
	Over 5" to 8"	3.50 per 100 lbs.
	Over 8" to 10"	3.75 per 100 lbs.
	Over 10"	4.00 per 100 lbs.
Skelp	Grooved	2.90 per 100 lbs.
	Universal	3.15 per 100 lbs.
	Sheared	3.25 per 100 lbs.

Measures will be taken by the War Industries Board for placing orders and supervising the output of the steel mills in such manner as to facilitate and expedite the requirements for war purposes of the Government and those nations associated with us, and to supply the needs of the public according to their public importance and in the best interest of all, as far as practicable.

Crow-Elkhart Line Improved

ELKHART, IND., Oct. 18—The Crow-Elkhart Co. has refined and improved its models for the new season, the new line including the following models: Five-passenger touring, $935; five-passenger De Luxe touring, $995; four-passenger De Luxe cloverleaf roadster, $995; Invertible coupe, $1,195; Convertible sedan, $1,275. Bodies are all entirely new.

Government Plane Building Started

WASHINGTON, Oct. 19—Practically the total number of 20,000 airplanes for the United States army provided for in the $640,000,000 aviation bill passed by Congress in July is now under construction, contracts having been let and work started on both planes and motors. The types of planes now being manufactured, and in which the Liberty Motor will be installed, include the entire range of training machines, light high-speed fighting machines and powerful battle and bombing planes of the heaviest design. This statement is authorized by Secretary of War Baker, who says the giant battle planes contracted for are capable of the work of the Caproni, the Handley Page and similar types.

Saxon Plant for Ordnance

NEW YORK, Oct. 18—A meeting between Government officials, Saxon Motor Car Corp. officials and other interests was held last week with a view to arranging for taking over the new plant of the Saxon company to manufacture ordnance for the Government. Nothing definite was determined at the conference and the matter is still under negotiation. A $2,000,000 company was recently formed by the leading automobile makers and others to make ordnance with a $25,000,000 government contract assured as a starter. It was then stated that the purchase of the new Saxon plant was under consideration. Alvin Macauley, president of the Packard company; R. D. Chapin, president of the Hudson, and W. C. Anderson, president of the Anderson Electric Car Co., were among those interested.

Clark Heads Kansas City

KANSAS CITY, MO., Oct. 18—The Kansas City Motor Car Dealers' Association, at the annual meeting Oct. 1, re-elected A. T. Clark, of the Anderson Electric Car Co., president, and R. C. Greenlease, dealer in Cadillac, vice-president. The following directors were elected: John Butler, R. R. Bush, J. F. Martin, R. P. Rice, H. G. Kirkland, Harry Jennings and J. Frank Witwer. The dealers held a special meeting Oct. 3 to discuss the federal tax and the advance in freight rates. There was little difference of opinion as to the way to collect the tax—openly from the customer. As to freight rates, the distributors are working out the details of freight charges to their dealers.

Michigan School Adds Airplanes

DETROIT, Oct. 19—The Michigan State Auto School has opened classes in its new aeronautical motor department. The course includes the history of aviation, the theory of aeronautical construction, the aeronautical motor, including ignition and carburetion, the construction of propellers, fuselage work, including metal fittings, bracing and wiring, wing construction, controls, landing gear and pontoons, the care of the entire machine. The school has secured, by special permission of the government, aeronautical motors for practice and study purposes and has just made arrangements with the Curtiss Aeroplane Co. for securing a complete aeroplane and a great quantity of aeroplane materials. The course is under the direct supervision of a Curtiss expert, who will be constantly at the school and who will be always available to the students of the course.

1918 Velie Has Nine Different Body Styles

Four-Passenger Sport Model Added—Slight Refinements in Mechanical Details

MOLINE, ILL., Oct. 19—Nine body styles with improved lines, the addition of a sport model, and slight refinements in mechanical details briefly sum up the changes for 1918 in the two six-cylinder Velie chassis.

The sport model, on the larger chassis, is a low-hung four-passenger, with deep seats and individual steps replacing the running boards. The exhaust manifold extends through the hood and a two-way valve acts as a muffler cutout. Boyce Moto-Meter, power tire pump and victoria top are standard equipment and the price is $1,850. The price of the regular seven-passenger model on this chassis is $1,595, a reduction of $55 from the previous model.

In appearance, the new five-passenger on the smaller chassis is strikingly different. The higher radiator produces an almost horizontal hood line, while the roll of the body sides continues unbroken from the nose of the radiator to the rise of the rear seat.

Six other bodies are available on this chassis. The four-passenger roadster has a double cowl and greatly increased leg room; the two-passenger roadster has new lines; the coupe has seating room for four, the cabriolet with large side windows has room for three; the five-passenger touring sedan with staggered doors and reversible front seat and a brougham or town car complete the styles. Perfection exhaust heaters are used on all closed models.

The prices of the models on the smaller chassis are: Five-passenger, four-passenger, and two-passenger, $1,265; cabriolet, $1,750; sedan, $1,835; coupe, $1,850; town car, $2,400.

Sell Used Cars on Commission

SAVANNAH, GA., Oct. 18—Something entirely new in local automobile circles appeared this week with the opening of the Savannah Automobile Exchange. This concern was organized for the purpose of disposing of used cars on a commission basis. The company will also do repair work.

St. Louis Hears About Traffic

ST. LOUIS, Oct. 19—Members of the Automobile Manufacturers' and Dealers' Association listened to addresses by Barney Verheyen, secretary of the City Efficiency Board and Police Sergeant Gerk, in charge of street traffic regulations, at the October monthly meeting. These addresses were planned to direct the work of the association making traffic safer. H. W. Spalding, chairman of the Show Committee, reported that a building suitable for the annual show the middle of February was now assured and the plans were well under way.

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Patent Rights Question Discussed by Durand

Attorney-General's Decision on Cross-Licensing of Vital Importance to Automobile Business

WASHINGTON, D. C., Oct. 19—W. F. Durand, chairman of the National Advisory Committee on Aeronautics, discussing the decision of the Attorney-General with respect to the cross-licensing of patents in connection with aviation work, expressed the view that this decision will stamp out litigation, stimulate the aviation industry and clear the way for rapid economic production.

Chairman Durand said his committee had adapted to conditions which confronted them the plan worked out by the National Automobile Chamber of Commerce with respect to such cross licensing.

The broad facts are, Chairman Durand said, that arrangements developed as to the aeronautic field were attacked by those interested in patent rights, principally on the grounds that this arrangement was unfair, contrary to law, etc.

The aeronautics advisory committee then, he said, took measures to have the points attacked ruled upon by the highest possible authority. Secretary of War Baker referred it to the Attorney-General, submitting letters from himself and Secretary of the Navy Daniels setting forth the agreement in question, and asking particularly if it were in contravention of law.

The Attorney-General, after a careful inquiry, held that the arrangement was not in contravention of law.

Chairman Durand agreed the decision is of vital importance to the automotive industry and most timely. Also that it is apt to prove of great importance to machinery, electrical and other manufacturing interests.

It clears the way, he suggested, for production on a scale necessary to-day in view of the need for aviation apparatus.

Columbus, Ga., Closes Sundays

SAVANNAH, Oct. 18—All automobile and accessory shops in Columbus, Ga., will hereafter be closed on Sundays. The W. E. Cody Co. circulated a petition among all the garagemen in Columbus and all but one of them signed it, agreeing to close their shops every Sunday in the future. No previous notice was given the general public of the decision of the garagemen to make the change.

St. Louis Truck Dealers Organize

ST. LOUIS, Oct. 18—One result of the "Open Week" display of enclosed cars and trucks is the organization of the St. Louis Motor Truck Dealers' Association. The organization is the outgrowth of meetings held to plan the truck exhibit. It was while working out these details that the truck men discovered that they had many common problems that could best be worked out in concert. Charles E. Paggett of the Federal Truck Co. was made temporary chairman and W. E. Conway of the Garford Truck Co., treasurer. Two plans of organization were discussed—one to form an independent association, the other to make it a division of the Automobile Manufacturers' and Dealers' Association. The plan will be decided upon at a meeting yet to be held.

De Lisser to Build Factories in France

NEW YORK, Oct. 19—Horace de Lisser, chairman of the board of directors of the Ajax Rubber Co., and also chairman of the automobile and allied trades committee of the second Liberty Loan Committee, will soon leave for France to serve on General Pershing's Business Men's Staff with rank of major. His duties, with other members of the staff, will be to construct 15 miles of factories behind the fighting lines. These plants will furnish the army with such field equipment as cannot be brought from London and Paris or imported from neutral countries.

Plan Colorado State Body

DENVER, Oct. 19—Extensive plans are being made to hold a convention of all men interested in the automobile industry, in its various branches, in Denver during the automobile show, Nov. 12 to 18. A large group consisting of prominent automobile men in all sections of the state are working on a committee to organize a State Automobile Trades Association at this convention.

Portage to Expand

BARBERTON, OHIO, Oct. 18—Directors of the Portage Rubber Co. at a regular meeting passed a resolution calling a special meeting of stockholders Nov. 20 for the purpose of increasing the authorized capitalization to $10,000,000, half common and half preferred stock. According to the treasurer's report the $500,000 common and $500,000 preferred recently offered to stockholders has all been subscribed, and over half of the stock had been paid for in full instead of in four installments, as was permissible. The increase to be voted on is to provide for future growth, and it is desired that the stockholders waive their rights to subscribe for any part of the increased authorization. This is done so that in the future the preferred can be sold to the general public without asking stockholders to purchase from time to time; and it is not the intention of the company to sell any more common stock, except a certain amount that is to be set aside and sold to employees on an installment plan.

Karo to Handle Western Output

ALMA, MICH., Oct. 18—The Karo Karburetor Co. has been formed in Chicago with a capital of $50,000 to take the entire output of the Western Carburetor Co. of this city and is making plans to handle 200 carbureters per day.

Buyer Must Pay Tax, Say Kansas Dealers

St. Louis Distributers Favor Chamber's Suggestion of Adding War Tax to Retail Price

KANSAS CITY, Oct. 9—Dealers interviewed in Kansas City are unanimous that the customer will have to pay the tax. Difference of opinion is as to whether tax should go on at the factory as an increase in list price or be tacked on by the dealer as an outright payment of the tax by the customer.

Some dealers don't care whether customers know how much they make on each car, and would not mind even if the tax addition made at factory showed it. Others dislike disturbance of present price lists, urging that if tax is paid by consumer directly subsequent further taxation can be easily added.

The majority seems to prefer a straight-out collection from the consumer. W. J. Brace, of Hudson-Brace, says "direct without equivocation." Bruening Bros., handling the Apperson, say: "From consumer, whether direct or indirect." Moriarity, handling the Mitchell, says: "Adjust prices." O'Maley, of Ford, says: "Add to list."

St. Louis to Add the Tax

ST. LOUIS, Oct. 18—Motor car dealers here will add the war tax to the price of cars. An almost complete canvass of dealers indicates that all will accept the suggestion of the Automobile Chamber of Commerce: Bill the car at the established retail price and add as another item the war tax at 3 per cent. The dealers are unanimous in saying that they cannot afford to absorb this tax.

Chicago After Crooks

CHICAGO, Oct. 18—A centralized court for handling automobile theft cases may be organized in Chicago if the wholesale thievery of motor cars does not cease. This plan was advanced recently by *Motor Age* as a means of bringing car thieves to justice, and Chief Justice Olsen is now giving consideration to this plan.

326,524 Cars in Illinois

PEORIA, ILL., Oct. 18—With nearly 80,000 more automobiles in use in Illinois Oct. 1 than there were during the entire year in 1916 it does not look like war times, or high prices. All told 326,524 automobile licenses have been issued in the state thus far this year compared with 248,424 last year, an increase of 78,100.

New York Office for Blue Ribbon

BRIDGEPORT, Oct. 18—The Blue Ribbon Body Co. has established a New York sales office at 1823 Broadway. Charles Baasch, formerly with the Springfield Body Corp., has been appointed manager.

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Specifications of the Leading Cars

MOTOR WORLD GUIDE

Revisions Are Made in Table Every Week

Model	Motor	S. A. E.	Ignition	Carburetor	Starter	Clutch	Gearset	Wheelbase	Tires	Rims	2-Passenger	5-Passenger	7-Passenger	Coupe	Sedan	Limousine	Detachable Top
ABBOTT																	
6-44	6-3½x4½	25.3	Remy	Stmbg	Remy	DP	3	122	32x4	SS	1295	†1295	1295	....	1920	....	....
6-60	6-3½x5½	29.4	Remy	Stmbg	Remy	DD	3	122	34x4	SS	1595	....	1595	2150	2150	....	....
ALLEN																	
41	4-3½x5	22.5	Conn	Stmbg	A-Lite	DP	3	112	32x3½	SS	†1095	1095	....	....	1395	....	....
AMERICAN-SIX																	
A	6-3½x5	21.6	G & D	Zenith	G & D	D	3	122	32x4	SS	....	1375	....	....	....	....	....
ANDERSON																	
Six-40	6-3½x4½	25.4	Conn	Zenith	Wsths	DP	3	120	33x4	SS	....	1435	....	....	2165	....	....
APPERSON																	
6-17	6-3½x5	29.4	Remy	Rafid	Bijur	DP	3	130	34x4	SS	†1990	1930	1990	....	....	....	....
8-17	8-3½x5	33.8	Remy	Johnson	Bijur	DP	3	130	35x4½	SS	†2250	....	2250	....	....	....	....
AUBURN																	
6-39	6-3½x5	23.4	Remy	Rafid	Remy	DP	3	120	34x4	SS	1195	1195	*1220	....	....	....	1380
6-44	6-3½x5½	29.4	Delco	Rafid	Delco	DP	3	131	35x4½	SS	....	†1635	1635	....	....	....	1935
AUSTIN																	
Hy-King	12-2½x5	39.6	Delco	Stmbg	Delco	D	6	142½	34x4½	QD	3750	3750	4000	4550	4950	5250	....
BIDDLE																	
D	4-3½x5½	22.5	Dixie	Zenith	G & D	DP	4	122	32x4	QD	2200	2350	†2375	....	....	3800	3900
BOUR-DAVIS																	
17	6-3½x4½	25.3	Remy	Stmbg	G & D	DP	3	118	32x4	QD	....	1385	....	....	....	....	....
BREWSTER																	
	4-4 x5½	25.6	Bosch	Zenith	U.S.L.	C	3	125	34x4½	SS	7200	....	....	....	8000	8500	....
BRISCOE																	
B4-24	4-3½x5½	16.3	Conn	Buick	A-Lite	C	3	104	30x3½	C	725	725	....	....	....	....	850
BUICK																	
D 4-34-35	4-3½x3½	18.2	Delco	Marvel	Delco	DD	3	106	31x4	C	795	795	....	....	....	....	....
D-44-47	6-3½x4½	27.3	Delco	Marvel	Delco	DD	3	118	34x4	SS	1265	1265	....	‡1695	1795	....	....
E-49	6-3½x4½	27.3	Delco	Marvel	Delco	DD	3	124	34x4½	SS	....	....	1495	....	2175	....	....
CADILLAC																	
57	8-3½x5½	31.2	Delco	Own	Delco	D	3	{132 {125	35x5 34x4½	SS			2805	....	3205	4145	....
CASE																	
T17	4-3½x6	21.0	Conn	Rafid	A-Lite	C	3	120	34x4	SS	†1190	....	1190	....	....	....	....
U	6-3½x5½	28.4	Wsths	Rafid	Wsths	D	3	125	35x4½	....	....	....	1875	....	....	....	....
CHALMERS																	
6-30	6-3½x4½	25.4	Remy	Stmbg	Wsths	DP	3	{117 {122	32x4 34x4	SS	1250	1250	1350	1625	1850	2925	....
CHANDLER																	
17	6-3½x5	29.4	Bosch	Rafid	G & D	D	3	123	34x4	SS	1595	....	1595	2195	2295	2895	....
CHEVROLET																	
490	4-3½x4	21.7	Conn	Zenith	A-Lite	C	3	102	30x3½	C	635	635	....	....	1060	....	....
FA-5 FA-2	4-3½x5½	21.7	Remy	Zenith	A-Lite	C	3	108	33x4	SS	935	935	....	....	1475	....	....
D	8-3½x4	36.45	Remy	Zenith	A-Lite	C	3	120	34x4	SS	1385	1385	†1385	....	....	....	....
COLE															{2495		
860	8-3½x4½	39.2	Delco	Stmbg	Delco	C	3	127	35x4½	SS	†1995	....	1995	2495	{2695	....	....
COLUMBIA																	
	6-3½x4½	25.3		Stmbg	W.Lnrd	DP	3	115	32x4	....	†1450	1295	1295	....	1995	....	....
COMMONWEALTH																	
Ultra 4-40	4-3½x5	19.6	A.Kent	Carter	Dyneto	DD	3	110	32x3½	C	†975	965	....	....	....	....	....
CROW-ELKHART																	
CE-33-35	4-3½x5	19.6	Conn	Zenith	Dyneto	D	3	114½	32x3½	SS	†995	995	....	....	1195	1275	....
DANIELS																	
B	8-3½x5	33.8	Wsths	Zenith	Wsths	D	3	127	34x4½	QDR	†3100	3100	3100	....	....	....	....
DAVIS																	
H & I	6-3½x4½	25.3	Delco	Stmbg	Delco	C	3	119	34x4	....	1295	1295	1295	1695	1795	....	1995
J	6-3½x5½	29.4	Delco	Stmbg	Delco	C	3	124	34x4½	....	....	1595	1595	....	....	....	....
DETROITER																	
6-45	6-3½x4½	25.3	Conn	Ball	A-Lite	D		119	33x4	SS	‡1395	1395	†1425	....	1875	....	....
DISPATCH	4-3½x5	22.5	Bosch	Rafid	U.S.L.	G	4	120	36x3½	QD	1135	....	1210	1400	....	....	....
DIXIE FLYER																	
LS35	4-3½x5	16.9	Conn	Carter	Dyneto	D	3	112	32x3½	SS	†895	895	....	....	1295	....	....
DOBLE	2-5x4	....	Own Dobl	Stmb	Wagner			135	35x5	....	....	....	2500	....	....	....	....
DODGE BROTHERS																	
	4-3½x4½	24	Delco	Stewart	N.E.	D	3	114	32x3½	SS	835	835	....	1265	1265	....	1000

Model	Motor	S. A. E.	Ignition	Carburetor	Starter	Clutch	Gearset	Wheelbase	Tires	Rims	2-Passenger	5-Passenger	7-Passenger	Coupe	Sedan	Limousine	Detachable Top
MADISON																	
4	.....	....	.....	.....	.....	..	.	120	34x4	..	....	....	....	....	....	....	....
	6-3½x5	23.4	Remy	Rafid	Remy	DD	3	115	34x4	SS	†1285	1285	1375	....	....	....	....
MAIBOHM																	
A	4-3½x4	15.6	A.Kent	Zenith	Disco	DD	3	105	30x3½	C	795	....	....	....	....	....	....
MARION HANDLEY																	
6-40	6-3½x5	23.4	Wsths	Stmbg	Wsths	DD	3	120	32x4	SS	†1350	....	1350	....	....	....	....
6-60	6-3½x5½	29.4	Wsths	Stmbg	Wsths	DD	3	125	35x4½	SS	†1650	....	1650	....	2350	....	....
MARMON																	
34	6-3½x5½	33.7	Bosch	Stmbg	Bijur	C	3	136	32x4½	QD	....	3550	....	....	....	....	....
MAXWELL																	
25	4-3½x4½	21	A.Kent	K D	Simms	C	3	109	30x3½	C	‡745	745	....	1095	1095	1095	855
McFARLAN																	
	6-4½x6	48.6	Mag'to	Stmbg	Wsths	DP	3	136	35x5	QD	3500	3500	3500	....	4600	4650	....
MERCER																	
22-73	4-3½x6½	22.5	Bosch	Zenith	U.S.L.	DD	4	132	34x4½	QD	†3500	*3500	....	....	....	....	....
22-73	4-3½x6½	22.5	Bosch	Zenith	U.S.L.	DD	4	115	32x4	QD	3400	Raceabout	3250	....	....	....	....
METZ																	
25	4-3½x4	24	A.Kent	A.W.T.	Wsths	F	.	108	32x3½	C	650	650	....	....	....	....	....
MITCHELL																	
D-40	6-3½x5	25.4	Conn	Rafid	Splitdf	C	3	120	32x4	SS	1250	1250	....	....	....	....	300x
C-42	6-3½x5	29.4	Conn	Rafid	Wsths	C	3	127	34x4	SS	‡1490	1510	1525	2060	2240	2850	300x
MOLINE-KNIGHT																	
C	4-3½x5	22.5	Conn	Schebler	A-Lite	C	3	118	34x4	SS	†1495	1495	....	....	....	....	....
G	4-4 x6	25.6	Conn	Schebler	A-Lite	C	3	122	35x4½	SS	†1840	....	1840	2490	2440	....	....
MONITOR																	
C-R	4-3½x4½	22.5	Heinse	Schebler	Heinse	D	3	110	32x3½	SS	995	995	....	....	....	....	....
N-O	6-3½x4½	25.4	Heinse	Stmbg	Heinse	D	3	117	33x4	SS	1195	1195	....	....	....	....	....
MONROE																	
M-3	4-3 x4½	14.4	Conn	Zenith	A-Lite	DD	3	96	30x3	QD	565	‡635	....	....	965	....	....
M-6	4-3½x4½	16.9	Conn	Zenith	A-Lite	DD	3	115	32x4	QD	....	1095	....	....	....	....	....
MOON																	
6-36	6-3x4½	19.8	Delco	Titan	Wagner	DP	3	114	32x3½	..	....	1095	....	....	....	....	....
6-45	6-3½x4½	25.3	Delco	Rafid	Delco	DD	3	118	34x4	SS	‡1575	....	1575	....	....	....	....
6-66	6-3½x5½	29.4	Delco	Rafid	Delco	DD	3	125	35x4½	SS	†1850	....	1850	2450	2450	....	....
MURRAY																	
70-T	8-3½x5	33.8	Dixie	Zenith	Wsths	DP	3	128	34x4½	..	2800	....	2800	....	....Chassis		2300
NASH																	
671	6-3½x4½	29.4	Delco	Rafid	Bijur	DP	3	125	34x4	SS	....	....	1465	....	....	....	....
681-684	6-3½x5	25.4	Delco	Marvel	Delco	P	3	121	34x4	SS	....	1295	....	....	1965	....	....
NATIONAL																	
Six	6-3½x5½	29.4	Dixie	Rafid	Wsths	C	3	128	34x4½	QDR	†1995	†1995	1995	2645	2820	....	....
Twelve	12-2½x4½	39.7	Delco	Rafid	Bijur	C	3	128	34x4½	QDR	†2595	†2595	2595	3245	3420	....	....
NELSON																	
	4-3½x4½	15.6	Bosch	Zenith	U.S.L.	D	3	104	32x4	SS	1200	†1400	....	....	1800	....	....
OAKLAND																	
34-B	6-2½x4½	19.0	Delco	Marvel	Delco	C	3	112	32x4	SS	‡990	990	....	1400	....	....	....
50	8-3½x4½	39.2	Delco	Stmbg	Delco	C	3	127	34x4½	SS	....	....	1695	....	....	....	....
OLDSMOBILE																	
45	8-2½x4½	26.4	Delco	Johnson	Delco	C	3	120	34x4	SS	....	....	1467	....	....	....	....
37	6-2½x4½	18.9	Delco	Johnson	Delco	C	3	112	32x4	SS	†1185	1185	....	1595	1695	....	....
OLYMPIAN																	
	4-3½x4½	37	Conn	Carter	A-Lite	D	3	114	32x3½	....	†965	965	....	....	....	....	....
OVERLAND																	
85B4	4-4½x4½	27.2	Conn	Titan	A-Lite	C	3	112	32x4	SS	‡905	920	....	1275	1475	....	....
90	4-3½x5	18.2	Conn	Titan	A-Lite	C	3	{104 {106	31x4	C	755	770	†815	....	1215	....	....
OWEN-MAGNETIC																	
M-25	6-3½x5½	29.4	Bosch	Zenith	O-M	OM	6	125	34x4½	SS	....	3300	....	3650	....	4350	....
O-36	6-3½x5½	33.6	Bosch	Zenith	O-M	OM	6	136	35x5	SS	‡3950	†3950	3950	....	....	5000	....
PACKARD																	
3-35								{136				....	4100			5650	
3-25	12-3 x5	43.2	Delco	Own	Bijur	DD	3	{128	35x5	QD	....	3700	3700	5050	....	5250	....
PAIGE																	
6-39	6-3½x5	23.4	Remy	Stmbg	G & D	D	3	117	32x4	SS	1330	1330	....	....	1925	....	....
6-51	6-3½x5½	29.4	Remy	Rafid	Remy	D	3	127	35x4½	SS	†1895	....	1695	....	....	....	....
6-55	6-3½x5½	29.4	Remy	Rafid	Remy	D	3	127	35x4½	SS	....	....	1775	2850	....	3230	....

*6-passenger. †4-passenger. ‡3-passenger.

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DORRIS																			
I-C-6	6-4 x5	38.4	Bosch	Stmbg	Wsths	D	3	130	36x4½	SS	....	....	2785	3325	3350	4150	....
DORT																			
9	4-3½x5	16.9	Conn	Carter	Wsths	C	3	105	30x3½	QD	‡725	725	....	....	1095	....	845
ELCAR																			
D.F.	4-3½x5	19.6	Delco	Carter	Dyneto	DP	3	115	32x3½	SS	845	845	†845	....	....	....	....
ELGIN																			
	6-3 x4½	21.6	Remy	Stmbg	Wagner	DP	3	117	33x4	..	†1095	1095	....	1645	....	....	....
EMPIRE																			
50-51	4-3½x5	24.0	Conn	Stmbg	A-Lite	DP	3	115	33x4	SS	1165	1125	....	....	....	....	....
70-A	6-3½x4½	25.6	Conn	Stmbg	A-Lite	DP	3	120	34x4	SS	†1345	1345	1385	....	1625	....	....
FIAT																			
55	4-5½x6½	42	Bosch	Zenith	Wsths	D	4	140	35x5	QD	....	....	5500	....	....	6500	....
FORD																			
T	4-3½x4	22.5	Own	{Holly Kngstn	....	D	2	100	30x3½	rC	350	365	....	560	695	....	....
FRANKLIN																			
9	6-3½x4	25.3	A.Kent	Own	Dyneto	D	3	115	{32x4 {33x4½	SS	2000	2050	....	2850	2950	3200	....
GLIDE																			
6-40	6-3½x5	23.4	Wsths	Rafid	Wsths	D	3	119	34x4	SS	....	1395	....	....	1595	....	....
GRANT																			
K	6-3 x4½	21.6	Remy	Stmbg	Wagner	C	3	112	32x3½	..	‡875	875	....	....	....	....	....
HAL TWELVE																			
	12-2½x5	39.7	....	Stmbg	Wsths	DP	3	135	34x4½	SS	2600	†2600	2600	....	3500	4500	....
HALLADAY																			
S	6-3 x5	21.6	A-Lite	Stmbg	Wsths	D	3	118	33x4	SS	‡1185	1150	....	....	....	....	....
R	6-3½x5	23.4	Wsths	Stmbg	Wsths	D	3	122	34x4	SS	1385	1385	....	....	....	....	....
HARROUN	4-3½x5½	16.9	A.Kent	Stmbg	Remy	C	3	106	30x3½	..	....	785	....	....	....	....	....
HAYNES																			
36	6-3½x5	29.4	Remy	Rafid	L-N	DP	3	121	34x4	SS	....	1595	....	....	2260	....	....
37	6-3½x5	29.4	Remy	Rafid	L-N	DP	3	127	35x4½	SS	†1725	....	1725	....	2390	....	....
40	12-2½x5	36.3	Delco	Rafid	L-N	DP	3	121	34x4½	SS	....	2095	....	....	2760	....	....
41	12-2½x5	36.3	Delco	Rafid	L-N	DP	3	127	34x4½	SS	†2225	....	2225	....	2890	....	....
HOLLIER																			
186	6-3 x4½	21.6	Remy	Stewart	Aplco	C	3	116	32x3½	SS	....	1085	....	....	....	....	....
178	8-3 x4½	28.8	A.Kent	Stewart	Aplco	C	3	116	34x4	SS	†1285	1285	....	....	....	....	....
HUDSON																			
Super-6	6-3½x5	29.4	Delco	Own	Delco	D	3	125½	35x4½	SS	1650	†1750	1650	1950	2175	2925	....
HUPMOBILE																			
	4-3½x5½	22.5	A.Kent	Zenith	Wsths	D	3	119	34x4	SS	1385	1385	....	....	1735	....	....
NU	4-3½x5½	22.5	A.Kent	Zenith	Wsths	D	3	134	35x4½	SS	....	....	1540	....	....	....	....
INTER-STATE																			
T	4-3½x5	19.6	Remy	Schebler	Remy	C	3	110	33x4	SS	875	925	†950	....	1325	....	....
JACKSON																			
349	8-3 x3½	28.8	A-Lite	Zenith	A-Lite	DP	3	118	34x4	SS	†1495	1495	1570	....	2195	....	1705
JONES	6-3½x5½	29.4	Remy	Stmbg	Remy	DP	3	125	34x4	..	....	1675	1675	....	2550	....	....
JORDAN																			
Sixty	6-3½x5½	29.4	Bosch	Stmbg	Bijur	DD	3	127	35x4½	SS	1995	†1995	1995	....	2650	3300	....
KING																			
E	8-3 x5	28.8	A.Kent	Ball	Bijur	DP	3	120	34x4	SS	‡1585	†1700	1650	....	2300	....	....
KISSEL																			
100-pt.	6-3½x5	25.3	Remy	Stmbg	Own	C	3	117	34x4	SS	†1295	1295	1385	1735	1735	....	1735
Double-6	12-2½x5	39.7	Delco	Stmbg	Own	DD	3	...	34x4½	..	1385	....	2250	....	2650	....	2650
KLINE																			
6-38-G	6-3½x4½	25.3	Wsths	Rafid	Wsths	DP	3	120	34x4	SS	1275	1395	†1295	....	....	....	....
LEXINGTON																			
6-O	6-3½x4½	25.3	Conn	Rafid	Wsths	DD	3	116	32x4	QD	1345	1345	....	1450	1450	....	....
6-R	6-3½x4½	25.4	Conn	Rafid	Wsths	P	3	122	34x4	QD	....	....	1585	....	....	....	....
LIBERTY																			
6	6-3½x4½	25.3	Delco	Stmbg	Delco	DP	3	115	32x4	SS	1350	1350	....	....	1925	....	....
LOCOMOBILE																			
38 Series II	6-4½x5	43.3	Berling	Ball	Wsths	DD	4	139	37x5	QD	‡5150	*5000	5000	....	....	6200	....
48 Series II	6-4½x5½	48.6	Berling	Ball	Wsths	DD	4	142	37x5	QD	†6050	*5950	5950	....	....	7200	....
LOZIER																			
84	4-4½x6½	28.9	Bosch	Stewart	G & D	D	4	120	36x4½	SS	....	....	1695	....	....	....	....
82	6-3½x6	36.0	Eismn	Rafid	G & D	D	3	132	36x4½	SS	....	....	2775	....	....	....	....
LUVERNE																			
17	6-3½x5	33.7	Bosch	Schebler	Bosch	DD	.	132	35x4½	SS	....	....	1650	....	....	....	....

PAN-AMERICAN																			
	6-3½x5	23.4	G & D	Rafid	G & D	D	3	120	33x4½	SS	....	1500	....	....	....	....	....
PATERSON																			
6-45	6-3½x4½	25.4	Delco	Stmbg	Delco	C	3	117	32x4	C	†1295	1365	1295	....	....	....	....
PATHFINDER																			
3-A, B, C	12-2½x5	39.7	Delco	Stmbg	Delco	DD	3	135	35x5	SS	3250	3250	3250	....	....	....	....
PEERLESS																			
56-2	8-3½x5	33.8	A.Kent	Special	A-Lite	DD	3	125	35x4½	SS	†2340	....	2340	2850	2900	3690	....
PIERCE-ARROW																			
38-C-4	6-4 x5½	38.4	Bosch	Own	Wsths	C	4	134	34x4½	QD	4800	4800	†4800	5900	....	....	....
48-B-4	6-4½x5½	48.6	Bosch	Own	Wsths	C	4	142	35x5	QD	5400	5400	5500	6800	....	....	....
66-A-4	6-5 x7	60	Bosch	Own	Wsths	C	4	147½	36x5½	QD	†6400	6400	6500	7800	....	....	....
PILOT																			
6-45	6-3½x5	23.4	Delco	Tltan	Delco	DP	3	120	32x4	SS	†1295	1295	....	....	....	....	....
PREMIER																			
6-B	6-3½x5½	27.3	Delco	Johnson	Delco	DP	3	125½	35x4½	SS	2285	....	2285	....	....	....	....
PRINCESS																			
4-36	4-3½x4½	22.5	Splitdf	Schebler	Disco	D	3	108	32x3½	....	825	825	‡825	....	....	....	....
REGAL																			
J	4-3½x4½	19.6	A.Kent	Carter	A-Lite	C	3	108	30x3½	QD	....	795	....	....	....	....	....
REO																			
M	6-3½x5½	30.4	Remy	Rafid	Remy	DD	3	126	34x4½	SS	....	†1385	1385	....	1950	....	....
R	4-4½x4½	27.2	Remy	Johnson	Remy	DD	3	115	34x4	SS	‡985	985	....	....	....	....	....
ROAMER																			
R.A.	6-3½x5	23.4	Bosch	Stmbg	Bijur	DP	3	127	34x4	SS	2150	1850	....	....	....	....	....
ROSS																			
	8-3½x5	33.8	....	....	W.Lnrd	DD	3	130	35x4½	SS	‡1850	....	1850	....	....	....	....
SAXON																			
B-5-R	4-2½x4	12.1	A.Kent	Schebler	Wagner	DD	3	96	30x3	DC	395	....	....	....	....	....	....
S-4	6-2½x4½	19.8	Remy	Stmbg	Wagner	DD	3	112	32x3½	SS	935	935	....	1395	....	....	....
SAYERS	6-3½x4½	25.3	Delco	....	Delco	P	3	...	32x4	..	....	1295	....	....	....	....	....
SCRIPPS-BOOTH																			
D	8-2½x3½	22.0	Remy	Zenith	Wagner	DD	3	120	32x4	SS	†1425	....	....	....	....	....	....
G	4-3½x4	21.7	Remy	Zenith	Remy	C	3	110	30x3½	C	1250	....	....	....	....	....	....
SIMPLEX																			
5	6-4½x6½	45.9	Eismn	Nwcmb	Bosch	D	4	143½	37x5r	QD	Chassis	7000	....	....	....	....	....
SINGER																			
17	6-4 x5½	38.4	Bosch	Rafid	Wsths	DD	4	138	35x5	QD	3800	†3800	3800	....	....	4750	....
STANDARD																			
8	8-3½x5	33.8	Splitdf	Zenith	Aplco	D	3	127	35x4½	....	†1950	....	2000	....	2500	3500	....
STANLEY																			
Steamer	2-4 x5	....	....	....	....	..	.	130	35x4½	SS	‡2200	2200	2200	....	....	....	....
STEARNS																			
SKL4	4-3½x5½	22.5	Remy	Schebler	Wsths	DD	3	119	34x4	SS	†1785	1785	1925	2300	2385	3200	....
SK8	8-3½x5	33.8	Remy	Rafid	Wsths	DD	3	125	35x4½	SS	†2575	....	2575	3200	....	3875	....
STEPHENS																			
Salient Six	6-3½x4½	25.3	Delco	Stmbg	Delco	P	3	117½	32x4	..	‡1485	1485	....	....	....	....	....
STUDEBAKER																			
SF-4-40	4-3½x5	24.2	Remy	Schebler	Wagner	C	3	112	34x4	SS	‡1050	....	1050	....	....	....	....
ED-6-50	6-3½x5	36.4	Remy	Schebler	Wagner	C	3	122	35x4½	SS	‡1385	....	1385	1850	1850	2750	....
STUTZ																			
R	4-4½x6	30.6	Bosch	Stmbg	Remy	C	3	130	32x4½	SS	2550	†2650	*2750	....	....	....	....
S.Bearcat	4-4½x6	30.6	Bosch	Stmbg	Remy	C	3	120	32x4½	SS	2550	....	....	....	....	....	....
SUN																			
17	6-3½x5	23.4	Remy	Rafid	Remy	DP	3	116	34x4	SS	†1345	1345	1345	....	....	....	....
VELIE																			
28	6-3½x4½	25.3	Remy	Rafid	Remy	DP	3	115	32x4	SS	1265	1265	†1265	....	1835	....	....
27	6-3½x5½	29.4	Remy	Rafid	Remy	DP	4	124	33x4½	SS	....	....	1595	....	....	....	....
WESTCOTT																			
S-17	6-3½x5½	29.4	Delco	Rafid	Delco	DD	3	125	35x4½	SS	†1790	1790	1790	2790	2790	....	....
WHITE																			
16-Valve	4-4½x5½	28.9	Bosch	Own	L.N.	P	4	{124½ {137½	33x4½ 37x5	QD	†4600	....	4600	5650	5650	5800	....
WILLYS-KNIGHT																			
88-4	4-4½x4½	27.2	Conn	Tltan	A-Lite	C	3	121	34x4½	SS	....	....	1485	....	2185	2385	....
88-8	8-3½x4	36.4	Remy	Zenith	A-Lite	C	3	125	34x4½	SS	....	....	1985	....	2685	2785	....
WILLYS																			
89-6	6-3½x5½	29.4	Conn	Tltan	A-Lite	C	3	120	33x4½	SS	†1320	....	1320	....	2000	....	....
WINTON																			
33	6-3½x5½	33.7	Bosch	Rafid	Bijur	DD	4	128	36x4½	QD	2950	2950	3000	3865	4165	4165	....
48	6-4½x5½	48.6	Bosch	Rafid	Bijur	DD	4	138	37x5	QD	3500	3500	3500	4500	4750	4750	....

*6-passenger. †4-passenger. ‡3-passenger.

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Laurel to Make Cars

ANDERSON, IND., Oct. 19—The Laurel Motors Corp., which has taken over the Laurel Motor Car Co., has purchased a factory site in Anderson, and will erect a plant and manufacture Laurel cars and trucks. It is expected the plant will be operating about January 1. The Laurel Motor Car Co. had been manufacturing cars in Richmond, Indiana, for the past 2 years. The company will use a new 16-valve motor designed by Robert M. Roof of Anderson, Ind. The new model for 1918 will have a 116-inch wheelbase and all the popular types of bodies will be furnished.

Trucks Coming from Canada

WINDSOR, ONT., Oct. 17—The Tonsmore Truck Co., Ltd., has been incorporated with a capital stock of $100,000 divided into 1000 shares of $100 each.

Motor Car Securities Quotations

	Bid Oct. 20,	Asked 1917
*Ajax Rubber Co.	54	58
*J. I. Case T. M. Co. pfd.	..	81
Chalmers Motor Co., com.	2	6
*Chandler Motor Co.	71	73
Chevrolet Motor Co.	78	80
*Fisher Body Corp., com.	25	35
*Fisher Body Corp., pfd.	79	83
Fisk Rubber Co., com.	50	60
Fisk Rubber Co., 1st pfd.	100	105
Fisk Rubber Co., 2nd pfd.	85	95
Firestone Tire & Rubber Co., com.	98	101
Firestone Tire & Rubber Co., pfd.	99	101
*General Motors Co., com.	95	96
*General Motors Co., pfd.	77	79
*B. F. Goodrich Co., com.	42	43
*B. F. Goodrich Co., pfd.	100	103
Goodyear Tire & Rubber Co., com.	159	165
Goodyear Tire & Rubber Co., pfd.	99	101
Grant Motor Car Corp.	2	4
Hupp Motor Car Corp., com.	2½	3½
Hupp Motor Car Corp., pfd.	82	88
International Motor Co., com.	8	12
International Motor Co., 1st pfd.	..	50
International Motor Co., 2nd pfd.	15	30
*Kelly-Springfield Tire Co., com.	43	45
*Kelly-Springfield Tire Co., 1st pfd	85	90⅛
*Lee Rubber & Tire Corp.	15½	16

	Bid Oct. 20,	Asked 1917
*Maxwell Motor Co., Inc., com.	32	33½
*Maxwell Motor Co., Inc., 1st pfd	64	66
*Maxwell Motor Co., Inc., 2nd pfd	19	21
Miller Rubber Co., com.	140	155
Miller Rubber Co., pfd.	99	102
Packard Motor Car Co., com.	125	133
Packard Motor Car Co., pfd.	92	96
Paige-Detroit Motor Car Co.	23	25
Peerless Truck & Motor Corp.	10	11
Portage Rubber Co., com.	115	123
Regal Motor Car Co., pfd.	15	20
†Reo Motor Car Co.	21	23
*Saxon Motor Car Corp.	9	10
Standard Motor Construction Co.	8	9
Standard Parts Co.	..	78
*Stewart-Warner Speed Corp.	56	57
*Studebaker Corp., com.	39	40
*Studebaker Corp., pfd.	..	90
Swinehart Tire & Rubber Co.	35	45
United Motors Corp.	21¾	22⅛
*U. S. Rubber Co., com.	58½	59
*U. S. Rubber Co., pfd.	100	102
*White Motor Co.	39	40
*Willys-Overland Co., com.	23	24
*Willys-Overland Co., pfd.	85	87

*At close Oct. 20, 1917. Listed N. Y. Stock Exchange. †Par value $10.

Coming—THE SHOW CALENDAR—*Events*

Shows

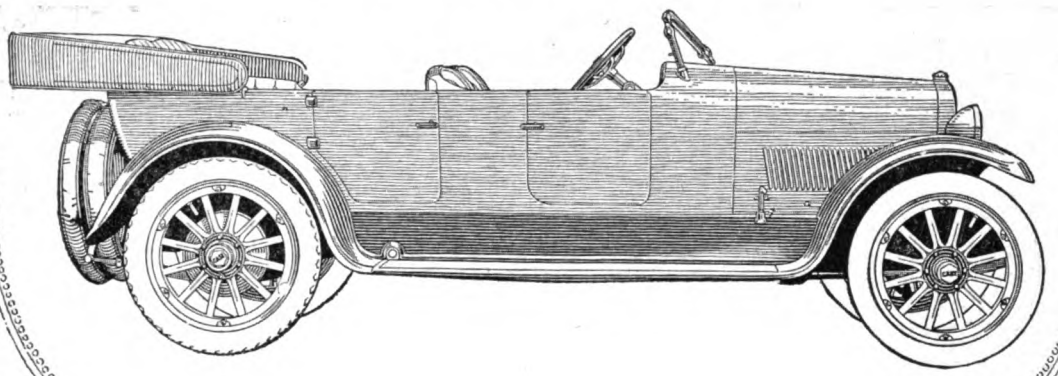
Dallas, Tex.	State Fair of Texas. S. I. Munger, Director in Charge.	Oct. 13-28
Dallas, Tex.	Dallas Automobile & Accessory Dealers' Assn., State Fair. S. I. Munger, Mgr.	Oct. 13-28
Atlanta, Ga.	Southeastern Fair, Atlanta Automobile Trade Assn.	Oct. 14-20
Columbus, O.	Columbus Auto Show Co., State Fair Grounds; J. P. Gordon, Chairman of Committee.	Oct. 18-27
Syracuse, N. Y.	First Annual Closed Car Show, State Armory, Syracuse Automobile Dealers' Assn.	Oct. 22-26
Worcester, Mass.	Casino and Bancroft Hotel. United Shows Co. E. H. Winchell, Publicity Manager.	Oct. 22-29
Los Angeles, Cal.	Motor Car Dealers Assn., Billy Sunday Tabernacle. J. S. Conwell, Mgr.	Nov. 12-17
Denver, Col.	Automobile Trades Assn., Show Committee, Auditorium. G. A. Wahlgreen, Mgr.	Nov. 12-18
Akron, O.	Akron Auto Show Assn., Auditorium Armory. C. G. Armstrong, Mgr.	Dec. 3-8 1918
Ft. Dodge, Ia.	Ft. Dodge Auto Dealers' Assn. G. W. Tremain, Mgr.	January
New York.	Salon, Automobile Salon, Inc., Astor Ballroom. John R. Eustis, Mgr.	Jan. 2-9
New York, N. Y.	Eighteenth Annual, Automobile Chamber of Commerce, Grand Central Palace.	Jan. 5-12
Washington, D. C.	Carnival and Open House Week, Automobile Trade Assn. of Washington.	Jan. 11-18
Providence, R. I.	R. I. Licensed Auto. Dealers' Assn., State Armory. Percival S. Clark, Mgr.	Jan. 11-19
New York, N. Y.	Motor Boat Show, Grand Central Palace, National Assn. of Engine & Boat Manufacturers.	Jan. 19-26
Montreal, Can.	National Motor Show of Eastern Canada, Montreal Automobile Trade Assn.	Jan. 19-26
Cleveland, O.	Seventeenth Annual, Cleveland Automobile Show Co., Wigmore Coliseum. Fred H. Caley, Mgr.	Jan. 19-27
Scranton, Pa.	Scranton Motor Trades Assn., Armory. Hugh B. Andrews, Mgr.	Jan. 21-26
York, Pa.	York Auto Dealers' Assn., Queen St. Tabernacle. T. F. Pfeiffer, Sec.	Jan. 21-26
Allentown, Pa.	Lehigh Auto. Trade Assn., Traylor Motor Co.'s Garage. P. W. Leisering, Publicity Mgr.	Jan. 23-28
Chicago, Ill.	Eighteenth Annual, Coliseum and Armory, National Automobile Chamber of Commerce.	Jan. 26-Feb. 2
Philadelphia, Pa.	Seventeenth Annual, Philadelphia Auto. Trade Assn., Commercial Museum Bldg.	Jan. 11-19
Milwaukee, Wis.	Milwaukee Automobile Trades, Inc., Auditorium; Bart J. Ruddle, Mgr.	Jan. 18-24
Portland, Ore.	Motor Car Dealers' Assn., Armory. Jos. M. Rieg, Mgr.	Jan. 21-26
Mifflintown, Pa.	Automobile Trade Assn., Valley Stream Auditorium.	Jan. 22-26
Manchester, N. H.	Academy. Couture Bros.	Jan. 28-Feb. 2
Peoria, Ill.	Peoria Auto and Accessories Dealers Assn. W. O. Ireland, Mgr.	February
Minneapolis, Minn.	Minneapolis Auto. Trade Assn., Walter B. Wilmot, Mgr.	Feb. 2-9
Kansas City, Mo.	Kansas City Motor Car Dealers' Assn., E. E. Peake, Mgr.	Feb. 9-16
St. Louis, Mo.	St. Louis Auto Mnfrs. & Dealers' Assn. Robert E. Lee, Mgr.	Feb. 11-16
Newark, N. J.	N. J. Auto Exhibition Co., First Regiment Armory. Claude E. Holgate, Mgr.	Feb. 16-23
San Francisco, Cal.	San Francisco Dealers' Assn. Exposition Auditorium. G. A. Wahlgreen, Mgr.	Feb. 16-24
Waterbury, Conn.	United Shows Co.	Feb. 18-23
Des Moines, Ia.	Des Moines Automobile Dealers' Assn., Coliseum. C. G. Van Vliet & Dean Schooler, Mgrs.	Feb. 18-23
Syracuse, N. Y.	Syracuse Automobile Dealers' Assn., State Armory. Harry T. Gardner, Mgr.	Feb. 18-23
Grand Rapids, Mich.	Automobile Business Assn., Klingman Building. Ernest T. Conlon, Mgr.	Feb. 18-23
Springfield, O.	Springfield Auto Trades Assn., Memorial Hall. C. S. Burke, Mgr.	Feb. 18-23
Pittsfield, Mass.	State Guard, State Armory. James J. Callagan, Mgr.	Feb. 18-23
So. Bethlehem, Pa.	Fourth Annual (cars 18-23; trucks 25-27). Coliseum. J. L. Elliot, Mgr.	Feb. 18-27
Cedar Rapids, Ia.	Cedar Rapids Auto. Trade Assn., Auditorium.	March
Kalamazoo, Mich.	Kalamazoo Automobile Dealers' Assn., Armory.	March
Omaha, Neb.	Omaha Auto. Trade Assn., Auditorium, Clarke G. Powell, Mgr.	Feb. 23-Mar. 2
Boston	Boston Automobile Dealers Association. Mechanics Building. Chester I. Campbell, manager.	Mar. 2-9
San Francisco, Cal.	Motor Truck Dealers of San Francisco, Auditorium. Ivan R. Gates.	Mar. 19-24
Trenton, N. J.	Trenton Auto Trade Assn., Second Regiment Armory. John L. Brock, Mgr.	Mar. 20-23
Stockton, Cal.	San Joaquin Auto Trade Assn. Samuel S. Cohn, Mgr.	Apr. 9-13
Springfield, Mass.	Auditorium Building, United Shows Co.	Dec. 3-9 1918

General and Racing

Columbus, O.	Dixie Highway Tour	Oct. 24
New York, N. Y.	Races, Sheepshead Bay Speedway	Oct. 27 1918
New York	Convention, National Assn. of Auto. Accessory Jobbers, Hotel Astor. Astor.	Jan. 11-16

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CASE SIX



Case Dealers Need Not Face This Obstacle

THE average fine car is limited to two or three dominant features. So the sale has to be made by elaborating on these few features.

But not so with the New Case Six.

It is an *All*-Feature car—its appeal embraces the whole car. The specifications prove that. Go over them and you will find they include only tried and proven merits; all are properly proportioned and related.

The New Case Six appeals to every astute purchaser. No few features predominate at the sacrifice of others.

To Please All

Beauty—speed—fuel economy—comfort—roominess—all the desired features are found in this Case Six.

It is the finest Case car ever built. That speaks volumes, for Case cars have long been admired.

Twenty-four leading concerns have contributed to the New Case Six, under the supervision of Case engineers.

The costliest features are included, such as: A Case-Continental six-cylinder motor, 3½ inches by 5¼ inches, highest type Westinghouse electrical equipment, Stewart vacuum fuel feed, Borg and Beck clutch, Grant Lees transmission, Columbia front and rear axles, dependable brakes with extra large drums, semi-elliptic springs, Jacox steering gear, 125-inch wheelbase, 35-inch by 4½-inch Goodyear tires, Stewart-Warner speedometer, Kellogg tire pump, Klaxon horn, Marshall cushion springs, folding windshield, Courtland one-man top, twin tire carriers, etc.

Smart Styles

The Family Model—for seven or five people—is in Dark Blue. The Four Door Sport Model—for four people—is in Periscope Green.

The All-Season Model—Springfield Type—is in Dark Blue.

For the price, no car we know has such an array of features. All are combined by Case engineers to form a most satisfying car.

In a few localities there are openings for Case dealers. Maybe in your town. We suggest your writing to us for particulars.

DEALERS: A limited number of keen business men may obtain this Case Six for their patrons. Perhaps you may arrange to participate with us. If you will write we will gladly tell you.

J·I·CASE T·M·CO·INC·*Founded 1842* 173 LIBERTY ST·RACINE, WIS·

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Built for Permanent Service~

The Filling Station of the Atlantic Refining Company at the intersection of the Torresdale Boulevard and Broad Street in Philadelphia—a part of the motor highway between New York and Philadelphia—has been built to offer an unusually high type of service to the motorists who pass this spot, in thousands, daily.

This **super service** station lives up to its impressive appearance by being equipped with the most efficient devices of every character that contribute to the convenience of motorists.

If you examine the gasoline hose in use at this filling station, you will find it is **TRIPLEXD—TRIPLEXD** exclusively.

This station has been built as a **permanent** plant—with an eye to actual service as well as impressive appearance.

The necessity, therefore, of reducing the upkeep expense to a minimum while developing efficiency to the highest degree dictated that only the highest quality of materials and most dependable equipment be selected for use in it.

This policy has been carried out without compromise.

This explains **TRIPLEXD.**

The gasoline hose, of course, is only one item in the equipment of a filling station, but it is an important item. Ordinary hose, both metal and rubber, requires frequent replacement. Hose is expensive.

The fact that **TRIPLEXD** hose is built for permanent service—aside from its superior strength and flexibility—made it inevitable that it would be selected for this purpose.

The use of **TRIPLEXD** insured the longest service they could possibly get out of a hose. (A minimum service life of one year is **guaranteed.**)

Add the superior efficiency of **TRIPLEXD**—its lightness, strength, flexibility, durability, etc.—to the item of economy and you will see why the Atlantic Refining Company's Filling Station, in common with other Filling Stations, Pump Manufacturers and Garagemen throughout the United States—**whenever they take the time to calculate actual costs—use TRIPLEXD gasoline hose.**

"Specify TRIPLEXD in your next pump outfit."

METAL HOSE & TUBING CO.
INCORPORATED
RAYMOND & TILLARY STS.,
BROOKLYN, N.Y.

"TRIPLEXD"

The *New* Gasoline Hose

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Buy Your Anchor Winter Top Right Away — If Your Dealer Won't Supply You, Write Us and We Will

Sedan Anchor Top Coupé Glass-Enclosed

Overland Model 85 B-4 and 6 Country Club Model 90 **Buick** D-34, D-35, D-44 D-45 1918-E-45 **Oakland** 32, 34 and 50

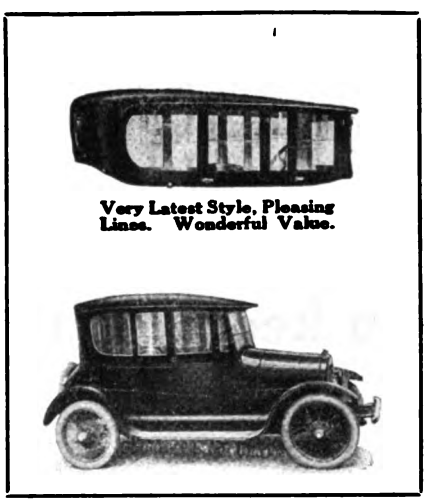
Very Latest Style, Pleasing Lines, Wonderful Value

Beautifully Finished, Strong, Light, Durable. No Overhang. No Squeak or Rattle. Comes Ready, Complete. Anyone Can Put On Easily and Quickly.

Classiest Jobs Every Way In Materials and Expert Workmanship

October deliveries of Anchor Glass-Enclosed Tops are being scheduled.

Carloads after carloads have gone to New York City.



Hundreds are making Overland, Buick and Oakland owners comfortable and proud of their cars' appearance on Chicago boulevards.

Hundreds of individual express orders are being filled direct from the factory for local dealers every week.

No one need be disappointed this season if they order promptly.

Anchor Glass-Enclosed Top for Overlands, Buicks and Oaklands are the final word in clean-cut, snappy style.

$65 to $165 and up according to model F. O. B. Cincinnati, O.

Fully Guaranteed. Perfectly safe in ordering yours by mail or wire. Give name of car and model. $25 deposit accepted.

Prompt Carload Deliveries Going in Every Direction

THE ANCHOR TOP & BODY CO.

Factory Established 30 Years

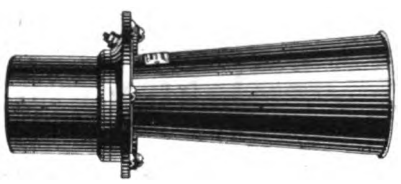
7447 South Street **CINCINNATI, OHIO, U. S. A.**

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SPARTON PRODUCTS

First Choice of America's Best Cars

You can rely upon them:



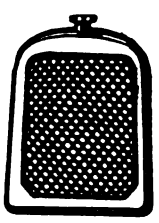
—to warn of car's approach

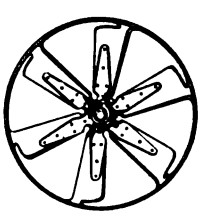
The Sparton Motorhorn has passed a test of 332,560 consecutive soundings without miss or hesitation—equal to ten years' actual service. Now standard equipment on 42 of America's best cars.



—to keep gasoline constant

If a constant supply of gasoline is kept in the tank the Sparton Gasoline Vacuum System will insure a constant supply at carburetor, regardless of grade or speed. On test, this device has raised gasoline 22½ feet above gravity level. Again, it has kept the gasoline supply constant to a motor of 448 cubic inches displacement while running at 68 miles per hour.





—to keep the motor cool

The Sparton Patented Type Radiator Fan will move the greatest volume of air at the highest speed with the least consumption of power. The Rim-integral-with-blades construction prevents loosening or bending of the blades and insures permanent alignment. Made and tested with the Sparton Honeycomb Radiator, the two form the most highly efficient and reliable cooling assembly.

We invite motor car manufacturers to write us for information. Prompt deliveries assured.

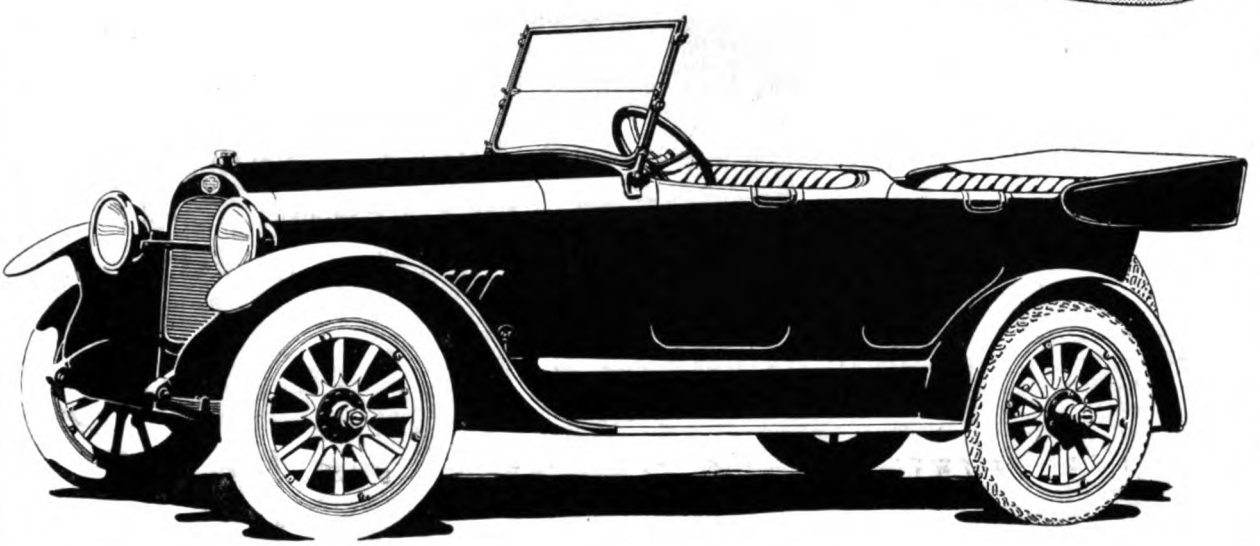


The Sparks-Withington Co.

Jackson, Mich., U. S. A.

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STEPHENS *Salient Six*

A STRANGE EXHILARATION

You who have driven and ridden in many kinds of cars—you ride in a Stephens Salient Six—remember it is a six—then, after you have seen its performance and after you have voiced your approval—you are bound to be enthusiastic—try to describe its *difference* from all the others.

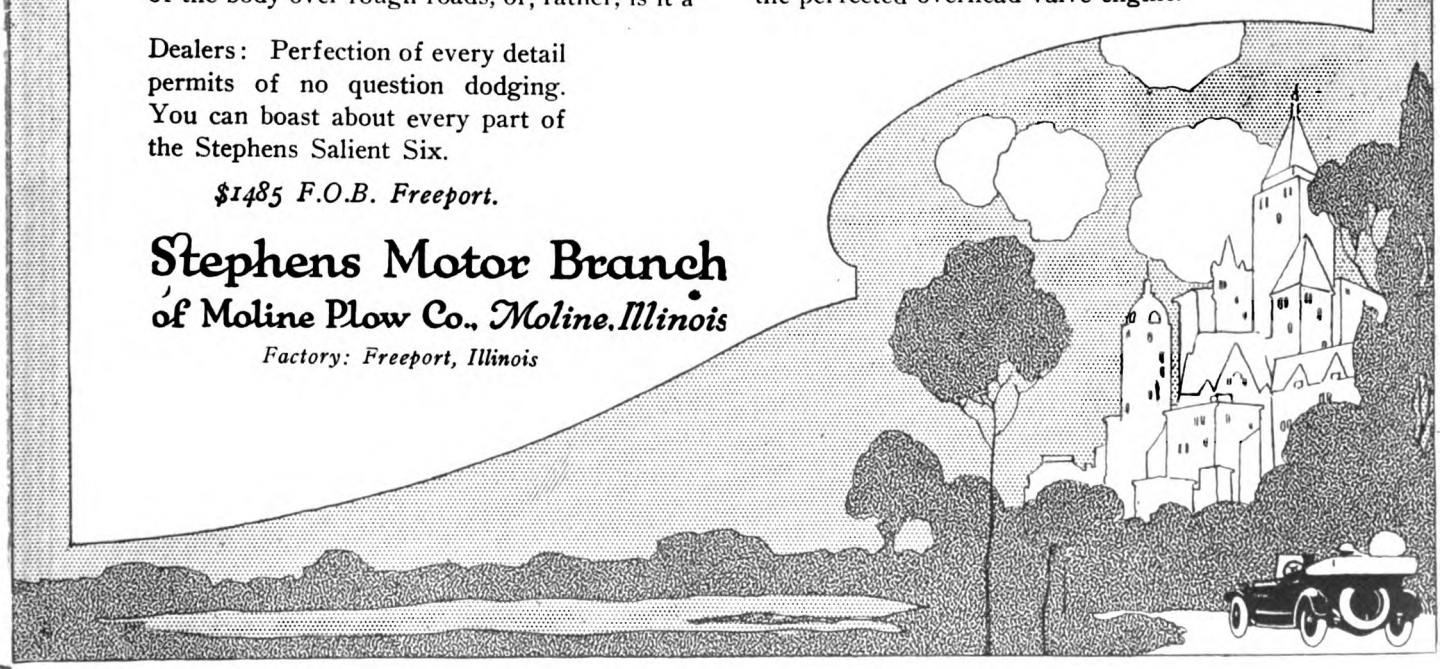
Call it extreme power alone? No! That does not fit. Is it the rapid acceleration, the smooth mechanical operation, the gliding effect of the body over rough roads, or, rather, is it a strange exhilaration that you can't seem to attribute to any one feature?

Let us answer for you! It is a unity of perfection. It is an engine which utilizes every bit of fuel energy combined with chassis construction of ultra-modern tendencies, and a perfectly balanced, deep-seated, lounging body hung on scientifically *right* springs. The Stephens Salient Six is not a car of specific features; it is a car of uniform goodness. It has the perfected overhead-valve engine.

Dealers: Perfection of every detail permits of no question dodging. You can boast about every part of the Stephens Salient Six.

$1485 F.O.B. Freeport.

Stephens Motor Branch
of Moline Plow Co., *Moline, Illinois*
Factory: Freeport, Illinois



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Your Truck should have the
FLOATING POWER PLANT

The Floating Power Plant is the vital exclusive feature of design in U.S. trucks.

It has the unqualified approval of U.S. truck owners—they recommend it enthusiastically.

The Floating Power Plant is the most flexible of all power plant mountings. It prevents the twisting of the truck—such as occurs on rough roads—from putting pressure and strain upon the motor.

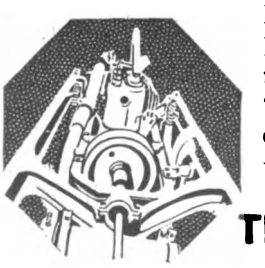
Though the truck stands so unevenly one wheel is six inches off the ground, the motor will still run smoothly and sweetly.

The U.S. can get itself out of difficulties where it would stick but for the Floating Power Plant.

It is as powerful on rough roads as on smooth.

Less fuel is required, less lubricating oil and it is not so often necessary to replace the wearing parts.

That is why the Floating Power Plant is valued so highly by owners and dealers alike.



Worm-Drive 2½, 3½ and 5 ton. Chain-Drive 2½ and 3½ ton.

THE UNITED STATES MOTOR TRUCK CO.
CINCINNATI, O.

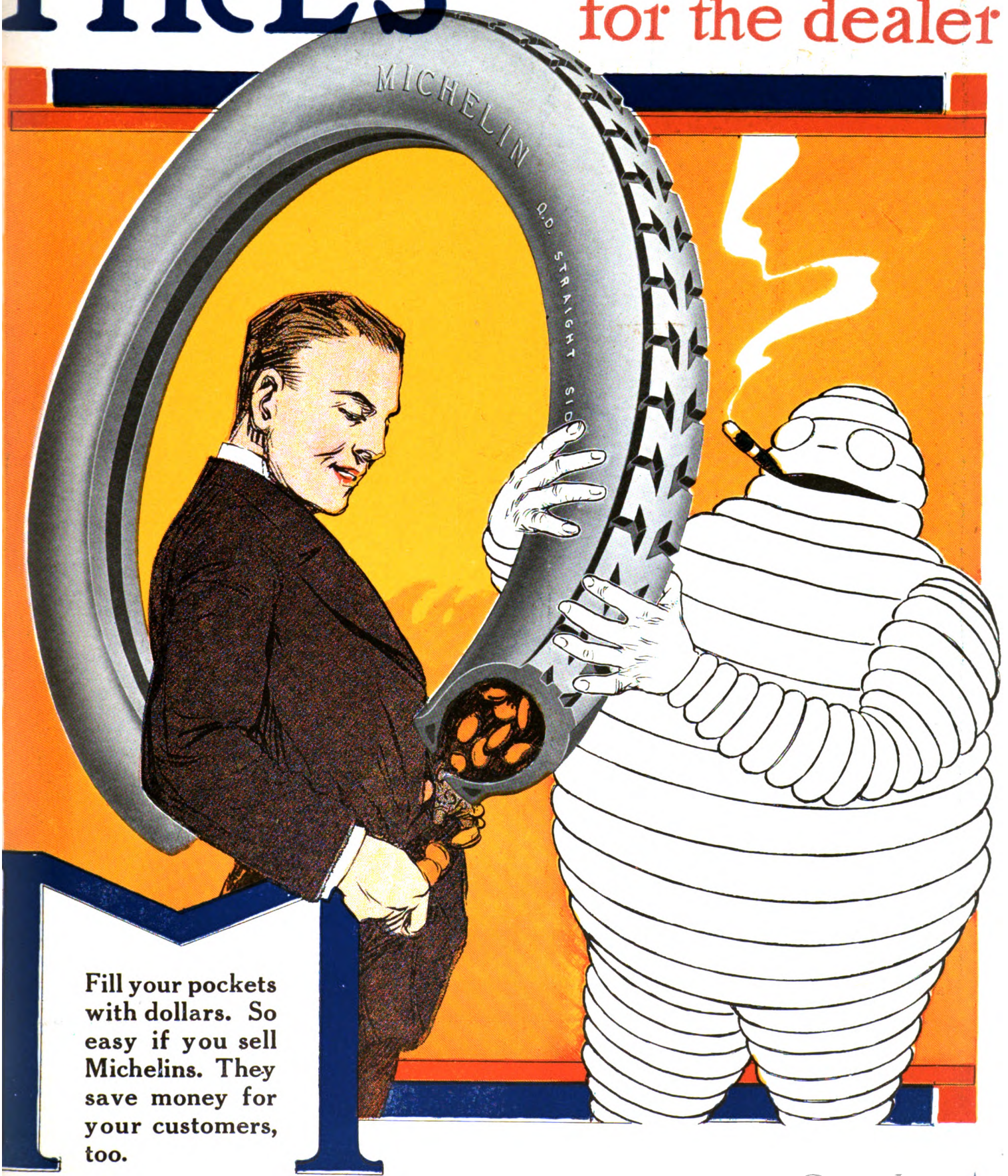
New York Philadelphia Baltimore Pittsburg Cleveland Denver
Detroit Chicago Atlanta St. Louis Boston

Dealers in all commercial centers.

When writing advertisers please mention Motor World—It identifies you

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MICHELIN TIRES mean real profit for the dealer



Fill your pockets with dollars. So easy if you sell Michelins. They save money for your customers, too.

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Talks to the number 1



Mr. Dealer:

Have you written to Michelin yet about that money-making proposition for 1918?

No? Why not do so today and be sure!

Michelin Tire Company
Milltown, N. J.



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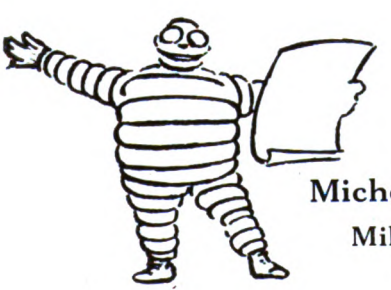
TIRE TRADE

THE house whose dealers stick to it year after year is a good house to tie up to, Mr. Dealer.

It is well known in the trade that Michelin Dealers do stick year after year.

Many of the big successful Michelin Dealers of today started selling Michelins in a small way years ago, in the very infancy of the industry, and are still selling Michelins.

Michelin wants you, too, to become a permanent part of this ever-growing organization and will gladly send you full particulars about the Michelin proposition for 1918, if you will write today.



Michelin Tire Co.
Milltown, N. J.

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Why Michelin Tires Are Best

The Michelin Universal Casing

THE remarkable durability of the Michelin Universal is due first of all to the superior quality of Michelin rubber and fabric, which are not only the best that money can buy, but when built into the finished tire, reflect the superior experience which Michelin possesses as the world's oldest tire maker.

Then, too, there is *more* rubber and fabric in Michelin than in other tires. You can prove this for yourself, both by measuring the thickness of a Michelin cross-section and by weighing the tire in comparison with other makes.

Better materials and more of them—that sums up the story of Michelin superiority.

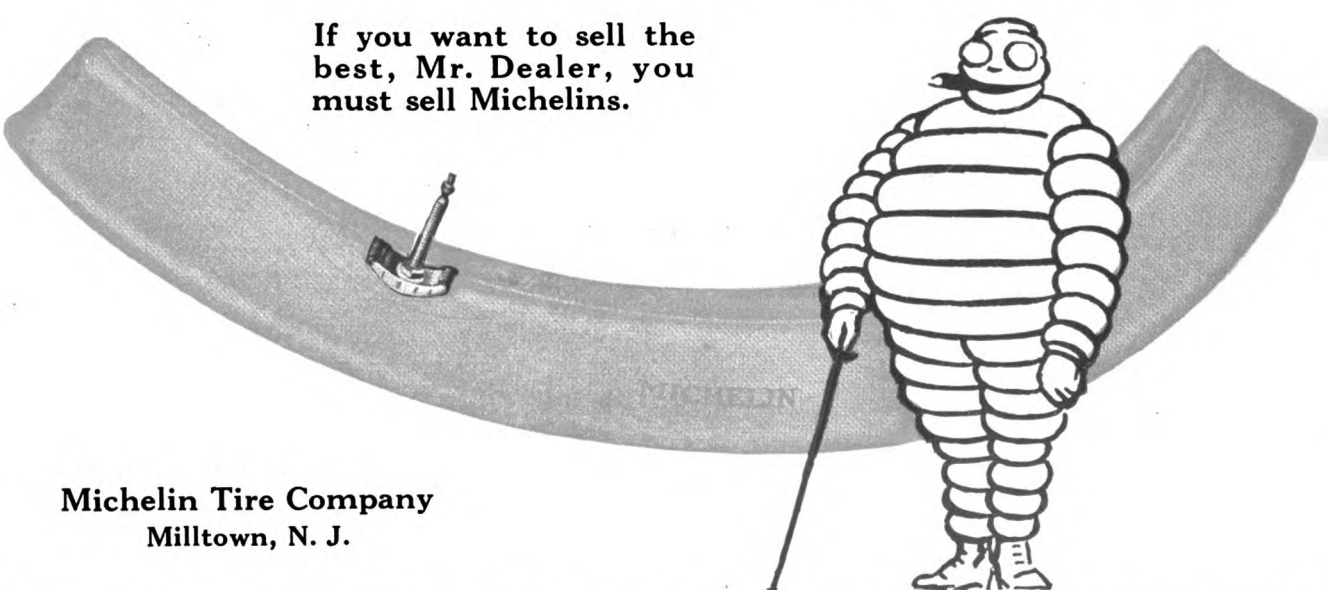
The Michelin Red Inner Tube

You know, of course, Mr. Dealer, about the supremacy of the Michelin Red Inner Tube. Wherever tires are used, it is acknowledged best.

The famous secret process, by which the rubber in Michelin Tubes is compounded, prevents it from becoming brittle or porous with age.

The shape of Michelin Tubes also adds to their life, for they alone are made round on circular mandrels to fit the inside of the casing perfectly.

If you want to sell the best, Mr. Dealer, you must sell Michelins.



Michelin Tire Company
Milltown, N. J.

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Acason
THE OWNER FIRST

Acason
THE OWNER FIRST TRUCKS

TRUCKS

TRUCKS

The Acason Truck is a business builder for dealers—
Because it offers a complete line:
Because it has a perfect score in service-satisfaction in almost every kind of truck use:
Because the factory backs the dealer in a broad service policy:
Our proposition to good dealers is well worth your consideration—it will pay you to investigate.

1½ ton Truck.....$2100.00	3½ ton Truck.....$3200.00
2 ton Truck.....2400.00	5 ton Truck.....4200.00

Light Tractor.....$2500.00
Heavy Duty Tractor..3800.00

Immediate Deliveries

ACASON MOTOR TRUCK CO.
DETROIT



THE OWNER FIRST

When writing advertisers please mention Motor World—It identifies you

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GRANT SIX

$875

f.o.b. Cleveland



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The Survival Of The Fittest

IN maintaining the price of the GRANT SIX at $875 during the past six months, the Grant organization has proved its unusual strength and stability in the most conclusive way.

During a period of stress and uncertainty in which many car manufacturers have been content to stand their ground, the makers of the GRANT SIX have been able to make gains in every direction.

For weeks past the daily shipments of the GRANT SIX have been the largest in the company's history.

People are buying the GRANT SIX today because of their confidence in the permanence of the institution which makes the car.

Both in the cities and in the rural territory the GRANT SIX is today the acknowledged leader among sixes under $1000. No other car begins to give a corresponding value even at the higher prices now asked for them.

No other popularly-priced six follows so closely the standards of construction and equipment used in the higher priced cars.

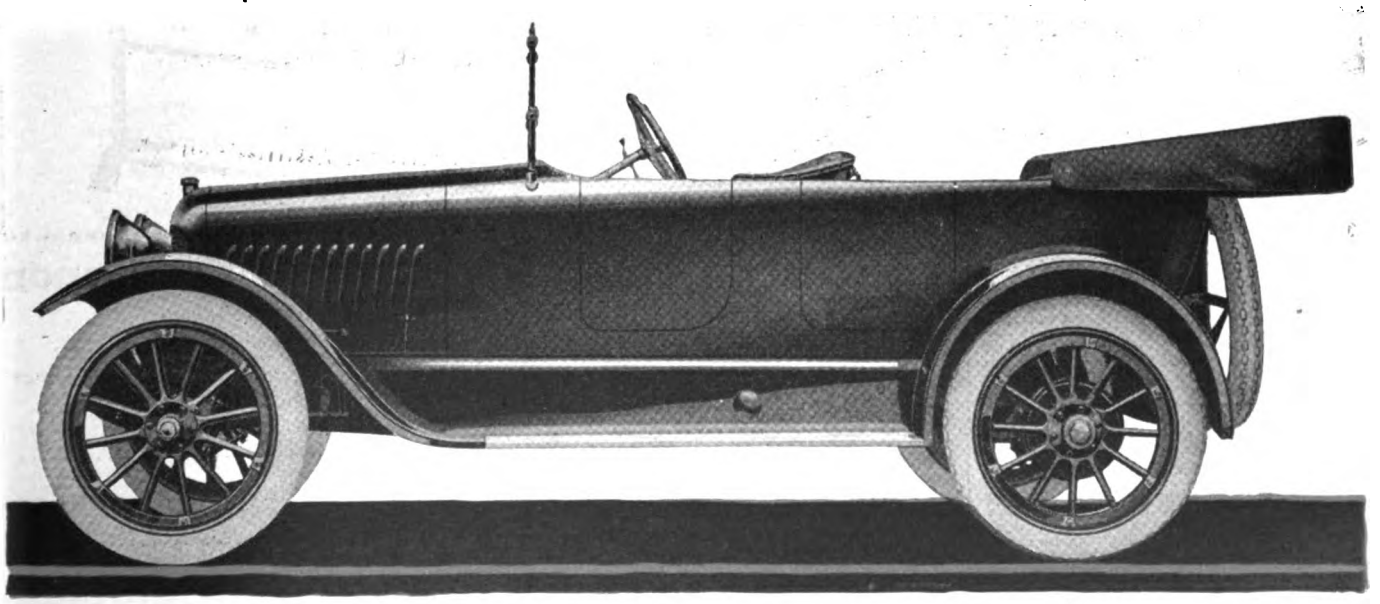
Judged by the prevailing standard of prices the GRANT SIX should sell for $1000.

Every one of the thousands of GRANT SIXES that have been sold this season has strengthened the car's position in the automobile field. In 1300 communities where the GRANT SIX is represented the GRANT SIX is established permanently.

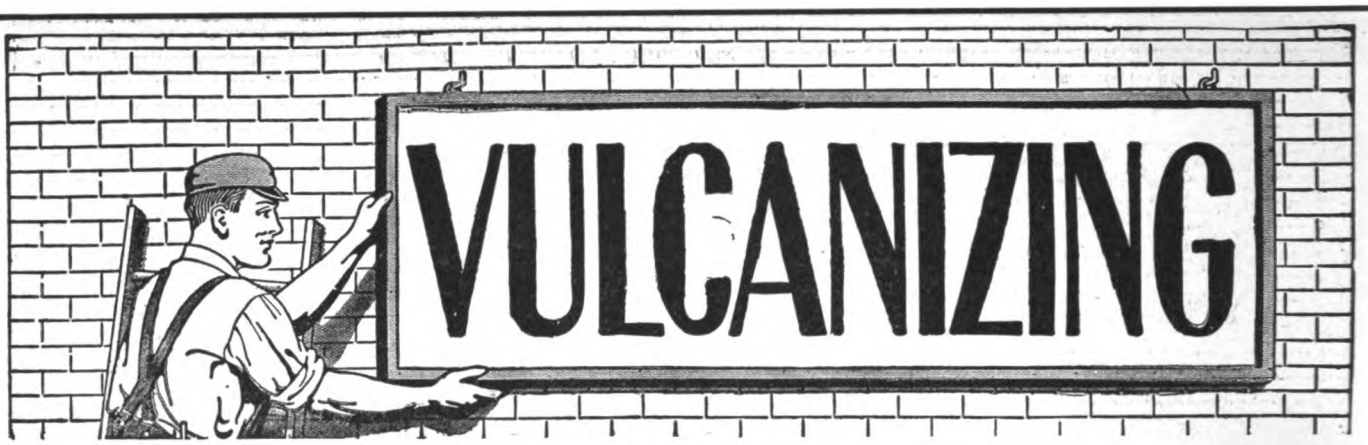
There is no uncertainty ahead of the dealer who sells the GRANT SIX. He knows that back of his car there is a solid, stable, resourceful institution, capable of and intent upon maintaining its position in the field.

Dealers who appreciate the advantage of a line of unquestioned permanence and stability are invited to join the GRANT SIX sales organization NOW.

GRANT MOTOR CAR CORPORATION, CLEVELAND



Digitized by Google



How to Make Bigger Money

Every one of your customers has tire repairing to be done right along. It is a simple matter for you to get this business. Half your problem is already solved. You have the customers and a place of business. Your overhead is fixed. You have workmen that can repair tires as well as they can do any other kind of repairing.

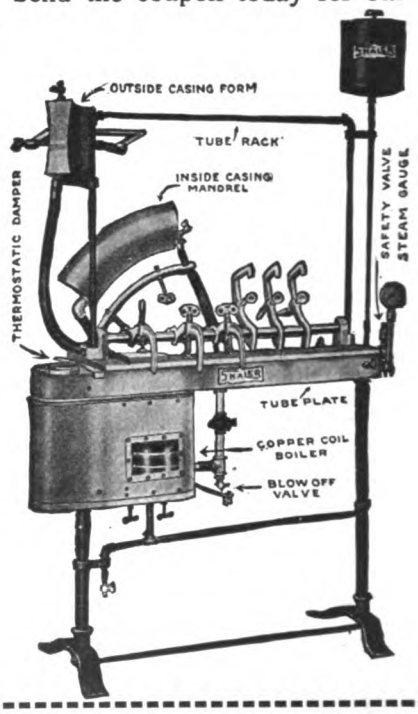
All you need now to get the tire repair profits is a vulcanizer, an economical, simple, inexpensive outfit that will enable your workmen to do every practicable kind of tire work perfectly and at a profit to you. Shaler Vulcanizers fill these requirements perfectly. Casing repairs are made with half the cost of time and material required by old methods. The Wrapped Tread Method is so simple that anyone can understand it. The initial cost of the vulcanizer and its cost of operation are only a fraction of the cost of other equipment that can neither do more work nor make as good repairs.

Resolve now to get the profits on your customers' tire repairs. Send the coupon today for our new 1917 catalog, the most complete vulcanizer catalog ever issued.

SHALER

Vulcanizing Plant $65

Steam heated. Price subject to trade discount



Repairs 200 tubes and a dozen casings daily. Temperature controlled automatically. Heats in 25 minutes—needs no regulating. Casings repaired by approved Wrapped Tread Method—no airbags.

No other guaranteed steam vulcanizer at near the same price has so great a capacity, heats so quickly, or operates so simply.

Widely used by the United States and foreign governments. Standard equipment in the majority of good repair shops. The only shop vulcanizer sold by 97% of the leading jobbers—year after year.

Ask Your Jobber's Salesman

The Shaler Line of Vulcanizers

(or "Profits for Accessory Dealers")

The Shaler Line includes the most popular motorists' vulcanizers on the market—models selling from $1.50 to $12.50—every one in demand and every one bearing a generous margin of profit.

Our 1917 advertising campaign is going to bring them more forcibly than ever to your customers' attention.

Ask your jobber's salesman about the famous "Vul-Kit" and the new "5-Minute." He will tell you what other dealers are doing with them.

Catalog Free Mail Coupon!

Every day you delay is a day of vulcanizing business lost. Get our new 1917 catalog. Mail the coupon at once—NOW!

C. A. SHALER CO.
441 Fourth St., Waupun, Wis.

Opportunity Coupon

C. A. SHALER CO.,
441 Fourth St., Waupun, Wis.

Send new catalog of Vulcanizers for Motorists and Repair Shops.

Name .....

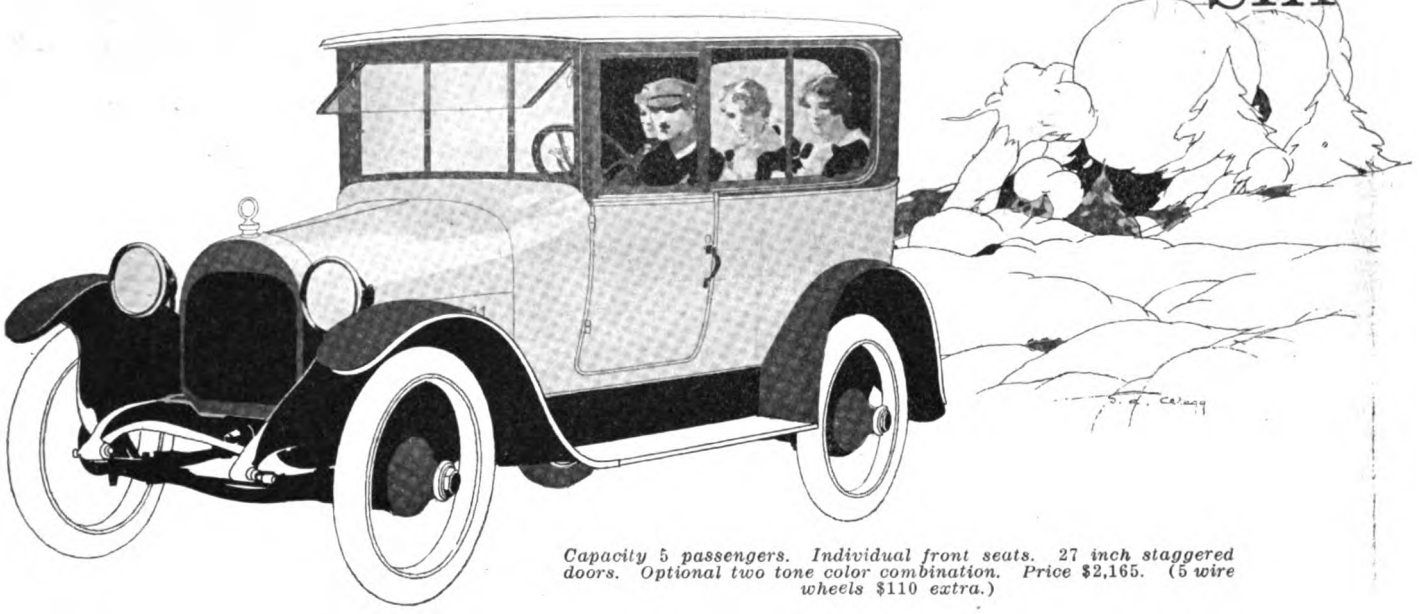
Address .....

Do you sell accessories? .....

Jobber's Name .....

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ANDERSON SIX



Capacity 5 passengers. Individual front seats. 27 inch staggered doors. Optional two tone color combination. Price $2,165. (5 wire wheels $110 extra.)

THE new Anderson Convertible Sedan is undeniably a car of unusual qualities.

Thanks to the established excellence of the mechanical units used in the chassis there is an abundance of power, exceptional economy and complete reliability.

But it is principally in the matter of coach work that this new Convertible Sedan is unusual.

It is important to remember that the Andersons have been designers and builders of fine coach work for more than 28 years.

This fact is worth mentioning for it explains why the Anderson Sedan possesses all the characteristics peculiar to the most advanced—and very expensive—custom built creations in the closed car field.

The body is of aluminum—to insure light weight. The frame work is of seasoned hard wood, braced and counter braced with all joints mortised. Every precaution known to the coach building craft is used to make it—and keep it—completely free of metallic rattles and rumbles.

The finish is hand applied and hand rubbed—the only sure way to insure deep and lasting lustre. In accordance with fashion's latest decree, two colors instead of one are used on the main and upper portions of the body.

The interior of the car is tailored in the finest fabrics in tones to match the body colors. There is a dome light. The cushions are deep and wide. There is plenty of leg room. The driving controls are especially handy. There is a Utility heater. There are Yale locks on the doors. There is a two piece ventilating wind shield, made rain proof by an overhanging glass screen.

The Convertible Sedan is an "All Season" car, suitable for any occasion or any weather.

For Summer driving the windows may be lowered, or with their supporting pillars made to disappear entirely. The result is a car as open and free to the air as a touring model yet with a permanent top and all the advantages that go with it.

DEALERS: *We have an attractive sales proposition for men of established business ability and financial standing in territories where we are not as yet represented.*

ANDERSON MOTOR COMPANY

Rock Hill, South Carolina

Foreign Dept. 8-10 Bridge St., New York City, U. S. A.

Sedan Convertible	$2,165	*Touring Car, with straight front seat*	$1,435	*Victoria Top*	$150
Convertible Sport Car	1,435	*Touring Car, with divided front seats*	1,435	*Houk Wire Wheels, extra*	110

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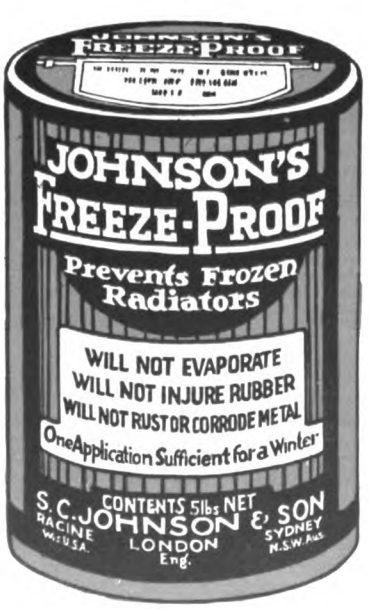
JOHNSON'S FREEZE-PROOF

Prevents Frozen Radiators

THE only way a motorist can be positively sure that his radiator won't freeze up is to use a non-evaporating anti-freeze preparation. You can never be sure of Alcohol or any other product which evaporates with the water. Besides this, the price of Alcohol makes it practically prohibitive for the coming winter.

Does Not Evaporate or Steam

Johnson's Freeze-Proof does not evaporate with the water. One application is sufficient for the whole winter unless the solution is weakened by leakage of the radiator or hose connections—through the overflow pipe—or by boiling over.



Economical and Easy

Johnson's Freeze-Proof is the most economical anti-freeze compound on the market. It is very easy to use—simply dissolve in water and pour into the radiator. One package is sufficient to protect a Ford to 5° below zero; for large cars use two packages to protect to 5° below zero, and three packages to protect to 20° below zero.

S.C. JOHNSON & SON RACINE, WIS

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JOHNSON'S FREEZE-PROOF

Does Not Evaporate or Steam

Absolutely Harmless

Johnson's Freeze-Proof does not injure rubber, cloth, packing or metal of any kind. It does not rust or corrode metal. There is less rust with Johnson's Freeze-Proof than there is with water alone or with a combination of water and alcohol.

Extensively Advertised

Johnson's Freeze-Proof is being very extensively advertised in the motor papers, magazines and weeklies. Its many advantages will make it the standard anti-freeze preparation for the coming winter. Your stock will not be complete without Johnson's Freeze-Proof. It is readily procurable as practically all jobbers have it in stock.

Johnson's Freeze-Proof is put up in packages containing 6½ lbs. net which retail at $1.50 each in the U. S. A. Liberal discounts to dealers. For further information write

S. C. JOHNSON & SON
Dept. MW
RACINE, WIS.



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First Carload Is Sold Before It Is Received

Atlanta Distributor Praises Manufacturer's Co-operation and Orders Three More Carloads for Delivery Within 30 Days



W. J. DABNEY IMPLEMENT COMPANY

AGRICULTURAL IMPLEMENTS
GASOLINE ENGINES
MACHINERY - VEHICLES - HARNESS
AUTOMOBILES

OFFICE & SALESROOMS
98-96 & 100 S. FORSYTH ST.

ATLANTA · GEORGIA

Oct. 6, 1917.

Lalley Electro Lighting Corp,

Detroit, Mich.

Gentlemen:

We have just received our first carload of thirty Lalley Lighting plants, and find that we have actual orders on file for twenty-nine, so you can see our stock has been exhausted already.

As a matter of interest to you, we take great pleasure in advising that we have practically disposed of our first shipment before car arrived in Atlanta.

We put on a whirlwind campaign and secured twenty-three live dealers, and now have them going " mighty " good. It is now up to you to take care of this organization, as we must have the "goods" .

Please ship us three other carloads, as per orders enclosed, and trust we can duplicate these orders within the next thirty days.

We feel our success has not been wholly attained by our own efforts, but made possible through the splendid cooperation of your Company, which we deeply appreciate.

The Lalley Light is a wonder, and the quickest proposition to " cash in " we have ever undertaken.

Sincerely yours,

W. J. Dabney

President.

LALLEY-LIGHT
THE BALL-BEARING ELECTRIC LIGHT PLANT

Digitized by Google

When Car Sales Are Dead Lalley-Light Is Moving

It Turns Winter's Dull Times Into Profits, Holds Organizations Together and Builds for Spring Business

The beauty of Lalley-Light, to the automobile dealer, is that it is salable in winter.

That one season is the average motor car dealer's bugaboo.

If he doesn't actually lose money in winter-time, he at least makes none.

But there are hundreds of dealers in this country who *will* make money this winter—on Lalley-Light.

Big Selling Season Is Just Ahead

These dealers will be better off in the Spring.

Their organizations will be intact. They will have done a good winter business.

They will even have new prospects for automobiles—farmers to whom they have sold Lalley-Light.

A farmer needs electric light all the year, and much more in winter.

Days are short. Evenings are long. Morning and evening chores are always done by lantern-light.

So winter is a big Lalley-Light selling season.

Farmers Waiting For Lalley-Light

Automobile dealers are quick to realize the advantage which Lalley-Light offers them.

They know the farmer is ready for Lalley-Light now, just as he was ready several years ago for automobiles.

By selling him automobiles, they have helped educate him to electric light.

They should be the first to follow up the work they have done.

Seven Years In Farm Use

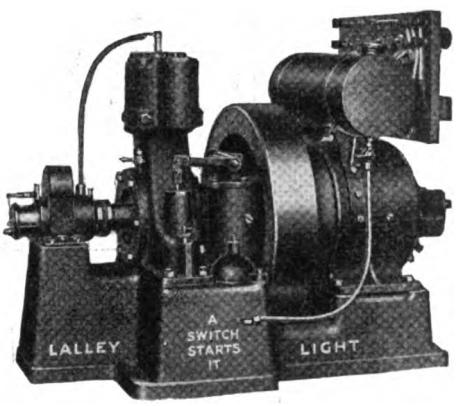
Lalley-Light—far from being an experiment or a new product—has been in actual farm use for more than seven years.

It has proved its quality, its ability to furnish all the electricity a farmer needs for light and power, its simplicity, and its economy.

Lalley-Light was designed especially for farm light and power purposes. It is not an adaptation or a make-over.

Its engine is of a special design, with big ball bearings throughout, and is patented.

Any automobile dealer, great or small, can take on Lalley-Light with full confidence.



Plant is 27 inches long, 14 inches wide, 21 inches high

Send The Coupon Right Away

If all these things are true—and you have our word on that—you should know more about Lalley-Light.

Your territory may still be open; but it will not be open long.

Dealers are signing up rapidly. They are awakening to the advantages of a winter business in Lalley-Light.

Sign and send the coupon right away.

Do it now, before you forget.

Lalley Electro-Lighting Corp.,
1826 Mt. Elliott Avenue,
Detroit, Mich.

Send me details of your proposition as to territory, discounts, etc.

.....

.....

.....

LALLEY-LIGHT
THE BALL-BEARING ELECTRIC LIGHT PLANT

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For the past six years Multibestos has been the first choice of engineers and manufacturers who select their brake lining on the basis of competitive tests.

MULTIBESTOS
BRAKE & CLUTCH LININGS

This well-known product needs no introduction, as the service it has given since being placed on the market has proved it to be without a peer in its field. The adoption of Multibestos as standard equipment on such cars as the Packard, Pierce-Arrow and Locomobile is proof of its superior quality.

Digitized by Google

Multibestos is manufactured complete in our own factory. This is a fact worth considering, for it places upon us the full responsibility for quality. Not only do we weave Multibestos—we spin every strand of the yarn that goes into its make-up. Every process is under the direction and close inspection of our own experts.

By thus controlling the entire course of production, we are able to guarantee the quality of Multibestos and offer to each user the most complete satisfaction.

Back of every foot of Multibestos stands the largest and most complete factory devoted to the manufacture of brake and clutch linings.

STANDARD WOVEN FABRIC CO.
WALPOLE, MASS.

New York Branch and Export Office
1834 Broadway

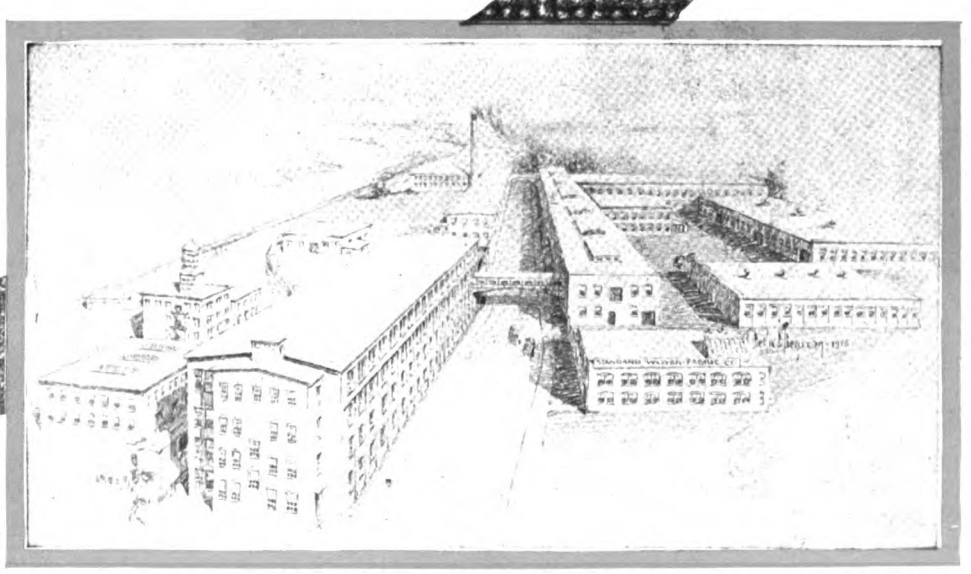
Detroit Branch Office
306 New Telegraph Building

Chicago Branch Office
1430 Michigan Avenue

Philadelphia Branch Office
406 Colonial Trust Co. Building

Other Stanwal Products

Stanwal Brake Lining and Clutch Facing
Tire Tapes
Stanwal Friction and Insulating Tapes
Splicing Compounds
Cable and Specification Tapes
Moulded Rubber Goods
Stanwal Matting
Stanwal Rubber Heels
Stanwal Fiber Soles



Digitized by Google

"Word of Honor"



WHEN you see the name Firestone on a tire, you are sure that it has the highest values possible to that type; values in mileage, comfort, safety and good looks.

When you see the name Firestone on a Cord Tire you are justified in expecting all and more than the accepted advantages in usual cord construction.

The Firestone name is on this Cord Tire because it has fulfilled all demands for greater strength, livelier action, fuel-economy and maximum speed. And, to the easy, luxurious ride is added the economy of Most Miles per Dollar.

As the Firestone Non-Skid tread has taken a commanding position among Fabric Tires so the Skidless Tread, angled against slip in any direction, assumes supremacy among Cord Tires. The Triple Tread Cord is the approved front wheel equipment.

The Firestone name has been made illustrious by quality in service; this Cord Tire will add still higher to its laurels.

FIRESTONE TIRE AND RUBBER CO.
Akron, Ohio Branches and Dealers Everywhere

Firestone

Digitized by Google

Take an inventory of—Your Future!

Are you doing an overflow business from someone who cannot meet the motor car demand?

Or do you sell a first-choice car—such as the Cole Eight?

The one dealer jumps from pillar to post—feasting one day, fasting the next.

The permanent dealer, the real merchant, the man, for instance, who sells the Cole Eight, is secure.

His business is permanent—and growing.

He will be in business years from now—and will *still* be selling the Cole Eight.

Think it over. Take an inventory of your future.

COLE 8

Prices

Touring Car	$1995
Tuxedo Roadster	1995
Tourcoupé	2495
Toursedan	2695

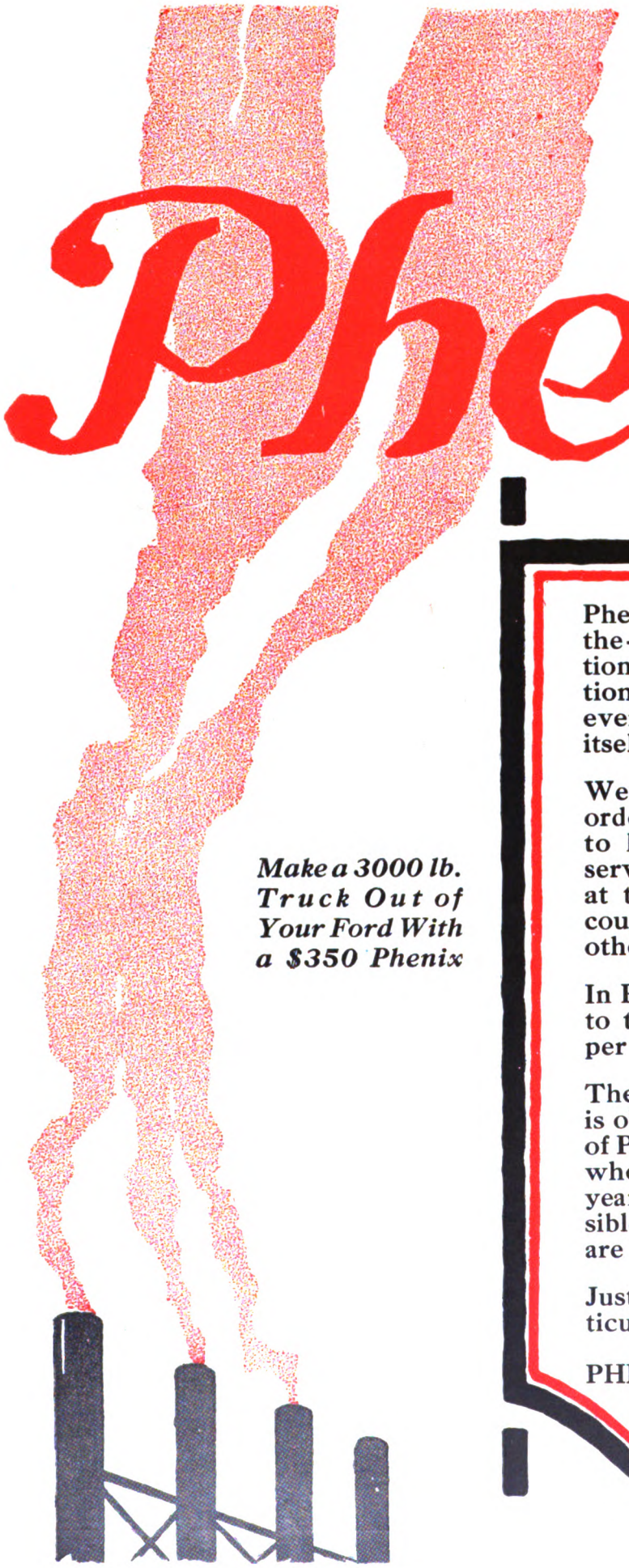
All prices f.o.b. factory
Subject to change without notice

Cole Motor Car Company
Indianapolis, U. S. A.

Digitized by Google

The Truck Sold for SERVICE

Phenix



Make a 3000 lb. Truck Out of Your Ford With a $350 Phenix

Phenix is not merely a truck. It is the-truck-that-passes-the-examination. Phenix does not claim exemption. It is not enough that it looks every inch a truck; it also proves itself every mile a truck.

We ask you to buy a Phenix, not in order to have a truck, but in order to have the finest transportation service possible for your business, at the smallest cost per ton-mile, counting all depreciation and every other reasonable charge.

In Phenix you are buying the ability to transport your loads at 5⅔ cents per ton-mile.

The Dealer who handles the Phenix is obtaining the sincere co-operation of PHENIX TRUCK MAKERS INC., who are in this business for long years of steady growth, which is possible only if dealers and customers are thoroughly satisfied.

Just drop us a line for further particulars.

PHENIX TRUCK MAKERS INC.
2337 So. Michigan Avenue
CHICAGO

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The best dealer's proposition in the tire business.



The tire is as good as the tube
The tube is as good as the tire

For 10 years Empire Red Tubes have been recognized by the trade and car owners as the best on the market. They have come to be called "the tubes that outlive the car itself."

And Empire Casings have won the same high standing. Actual records prove that the ***average*** Empire, in ***average*** running, will deliver thousands of ***extra miles.***

The same fine materials, the same painstaking workmanship, the same secret processes which for 30 years have made the name Empire famous for long life in rubber goods of all kinds, account for the surplus quality of every Empire tire product.

For dealers the Empire proposition is the best in the field.

The margin of profit is the fairest. The sales are increasing the fastest.

And the advertising is wide-spread, powerful and unique. Our full pages in The Saturday Evening Post, The Literary Digest and elsewhere are signed, not with our own name, but as follows: "The Empire Tire Dealer."

Thus we centre the consumer's attention, not on our factory, but on your store, in his own home town.

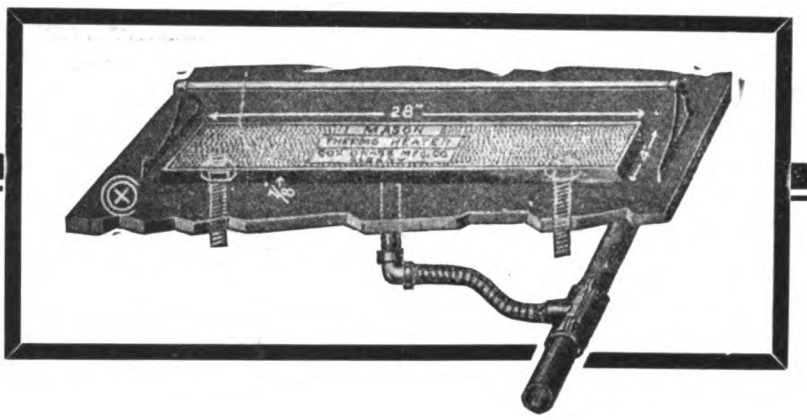
Empire advertising thus becomes your own advertising, addressed to the car owners of your own locality.

Write for our proposition today.

THE EMPIRE RUBBER & TIRE COMPANY
TRENTON, N. J.

Empire Tires

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The Feature of Most Value

in making the

THERMO AUTO HEATER

Superior to anything else of its kind is its SIMPLICITY OF DESIGN

Simplicity is the first requirement experienced dealers make for an accessory—such as a car heater.

They know that a simply designed heater is easy to sell because it is easier to get motorists to believe in it.

They know that a simply designed heater will work and will not get out of order. It is a guarantee of NO COME-BACK.

For these reasons the Thermo Auto Heater is popular with DEALERS and SUCCESSFUL with motorists.

THE THERMO AUTO HEATER works on the same principle as a radiator. It consists of a single gas-tight compartment through which part of the gas from the exhaust is allowed to pass.

The heat is kept at an even temperature by a thermostat which automatically closes the intake orifice as the heater gets warmer and opens it as it cools off.

This permits the intake to be made large enough for the heater to warm up quickly without danger to overheating.

A button on one side of the heater permits the thermostat to be regulated to suit different temperature conditions.

THE THERMO AUTO HEATER is strong and compact; made in two sizes—oblong, 28" x 4" x 7/8"; square, 8" x 14" x 7/8". It sits on the floor, not in it. The heater itself is raised 1/4" from the floor. It can be installed quickly and removed without in any way disfiguring the car.

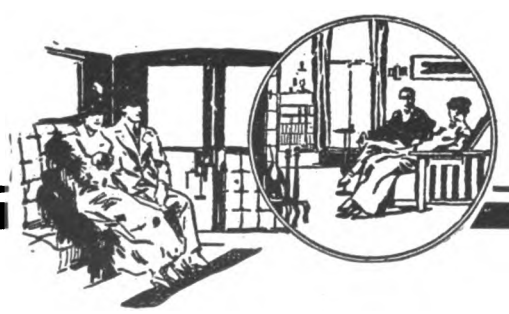
DEALERS—Write us today for proposition.

PRICES

Polished Cast Aluminum.....$18.00
Cast Iron Black Enamel..... 12.00

COX BRASS MANUFACTURING CO.

Established 1872 **ALBANY, N. Y.**



To Install

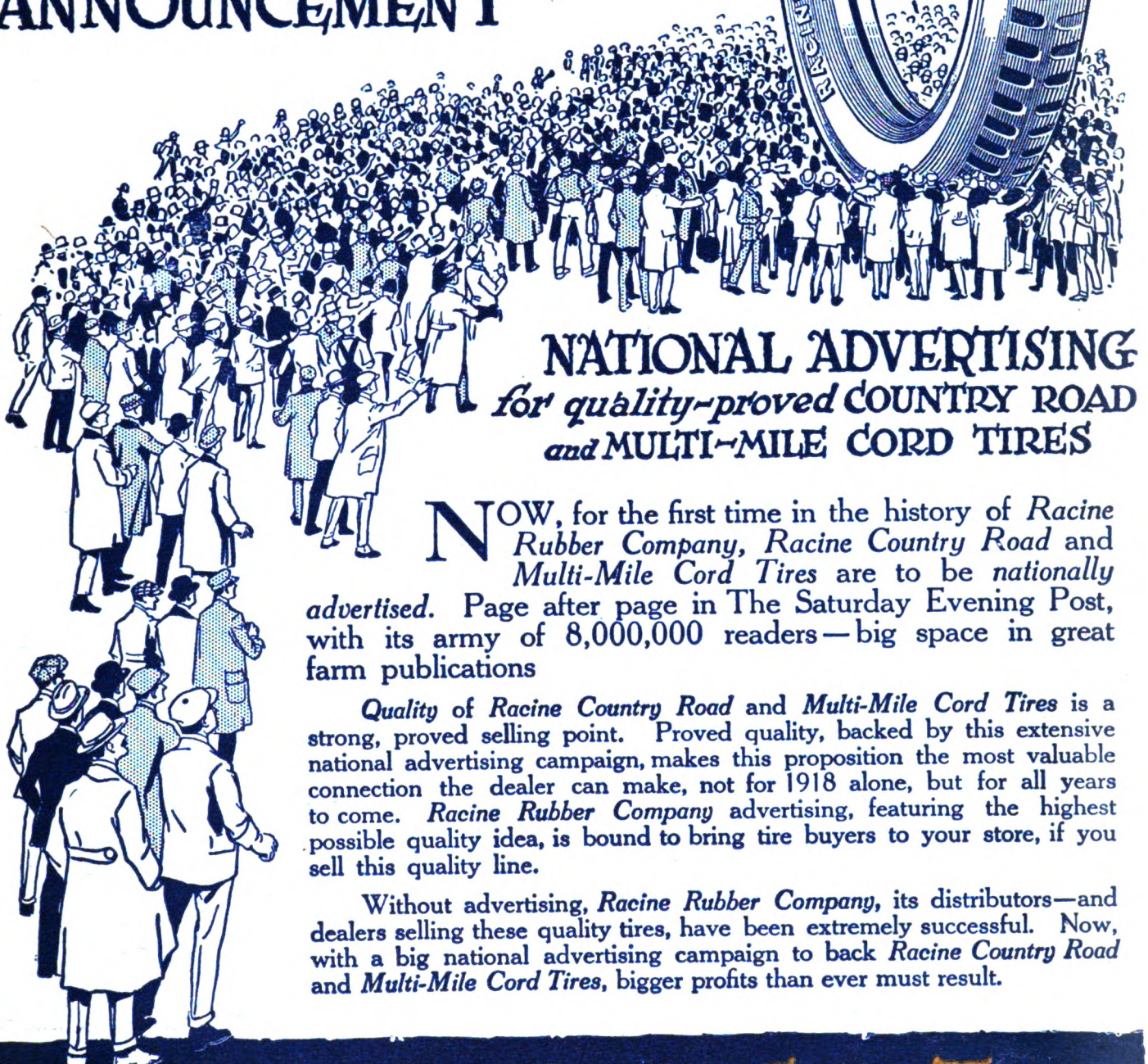
Cut V in exhaust pipe with hack saw. Clamp brass casting over same. Bore three holes in floor of car, opposite openings in bottom of heater. Screw nipples directly into heater and insert in floor. Put on lock washers and nuts to hold heater in place. Screw brass elbow on center nipple and clamp flexible tubing to elbow. Saw off excess tubing.

Digitized by Google

TIRE DEALERS!



Racine Rubber Company makes The YEAR'S MOST IMPORTANT ANNOUNCEMENT



NATIONAL ADVERTISING for quality-proved COUNTRY ROAD and MULTI-MILE CORD TIRES

NOW, for the first time in the history of *Racine Rubber Company, Racine Country Road* and *Multi-Mile Cord Tires* are to be *nationally advertised.* Page after page in The Saturday Evening Post, with its army of 8,000,000 readers—big space in great farm publications

Quality of ***Racine Country Road*** and ***Multi-Mile Cord Tires*** is a strong, proved selling point. Proved quality, backed by this extensive national advertising campaign, makes this proposition the most valuable connection the dealer can make, not for 1918 alone, but for all years to come. ***Racine Rubber Company*** advertising, featuring the highest possible quality idea, is bound to bring tire buyers to your store, if you sell this quality line.

Without advertising, ***Racine Rubber Company,*** its distributors—and dealers selling these quality tires, have been extremely successful. Now, with a big national advertising campaign to back *Racine Country Road* and *Multi-Mile Cord Tires,* bigger profits than ever must result.

Advertising *that* Really Sells Tires

Digitized by Google

RACINE
COUNTRY ROAD and MULTI-MILE CORD TIRES



BIGGER MONEY-MAKERS THAN EVER



Tie Up *with* This Quality Line *and* Watch Your Tire Profits Grow

NOW—with this strong continuous campaign of national advertising—and with all possible co-operation from the home office—dealers who sell *Racine Country Road* and *Multi-Mile Cord Tires* will make *more money* than ever before.

The *Racine Rubber Company* line is complete—a tire for every need. The famous *Racine Country Road*—5000 mile guarantee—is a record-breaker forservice. Extra quality at no extra price. The *Racine Multi-Mile Cord* is real cord tire quality. Also extra-serviceable red and gray tubes.

Prompt Deliveries From Distributors

Distributors for *Racine Rubber Company* are located at all principal distributing points. Complete stock always on hand. You can get prompt deliveries; all-'round efficient service from *Racine Rubber Company* distributors. They are top-notch tire men, with whom you will enjoy doing business. They will co-operate to the limit.

If you are interested in making more money—not in 1918 alone, but in all the years to follow—write at once for the details of this opportunity.

Fill out the coupon—get it to us at once—and all information will be quickly furnished by our nearest distributor.

Racine Rubber Co.
Dept. 2 Racine, Wis.

RACINE RUBBER COMPANY
Racine, Wis.

Please have your nearest distributor furnish details of the *Racine Country Road and Racine Multi-Mile Cord Tire* opportunity, with the understanding that it will in no way obligate me.

Name.....

Address.....

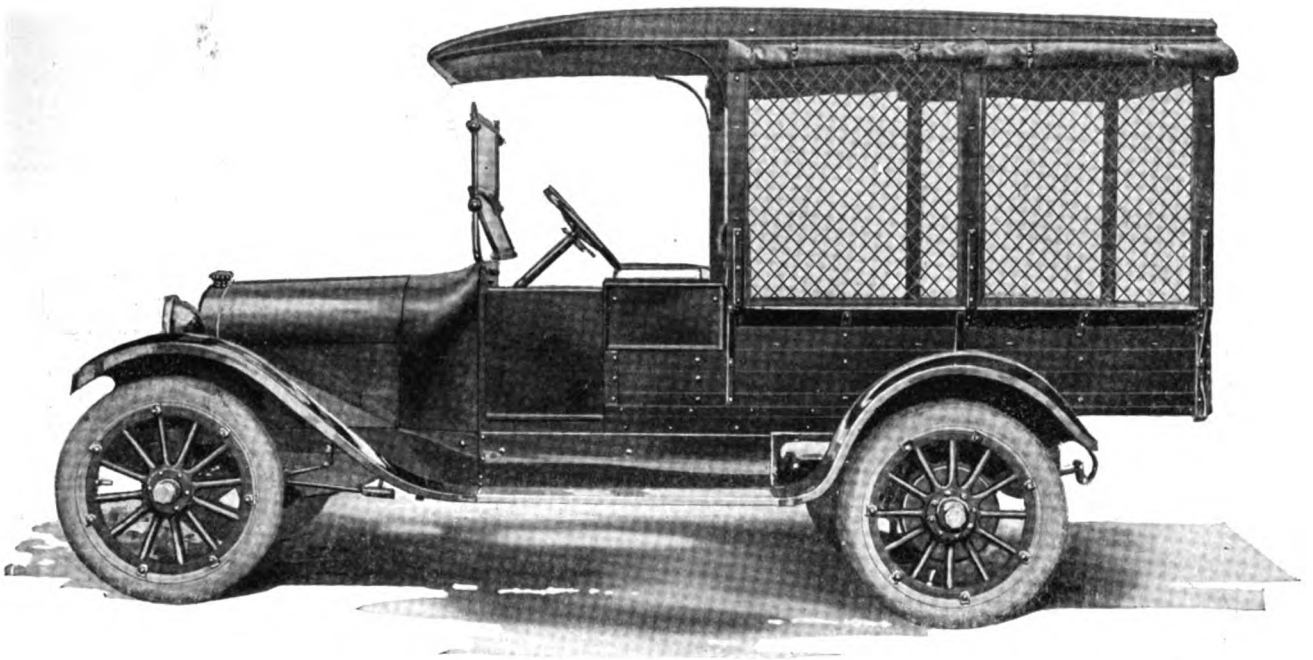
City..... *State*.....

(2)

Send Coupon At Once

Digitized by Google

THIS TIME ON THE DODGE



Over 200 of these *stock* BABCOCK Bodies on the regular DODGE chassis for U. S. Q. M. Dept.

BABCOCK

COMMERCIAL BODIES

Follow the Flag to Europe's Battle Line

UNITED STATES ARMY EXPERTS SELECTED BABCOCK BODIES as best adapted to the strenuous business of war **because** of their patented steel construction which alone combines

MAXIMUM STRENGTH—MINIMUM WEIGHT

Because they are constructed so that they can be readily knocked down, compactly crated for shipment and quickly erected without special tools or special skill. **Because** of the unit construction one broken member can be easily replaced from stock parts without hospital treatment. **Because** this unit construction permits prompt conversion of the open body to screen sides or full panels as occasion or the weather may dictate. **Because** BABCOCK Bodies are **good** bodies and bear an enviable reputation.

We Make the Standard Army Ambulance

MR. DODGE DEALER:

Give your trade the benefit of Uncle Sam's cold mechanical analysis. Profit with your customers from these qualities which are just as indispensable in the commercial as in the battle field. Express, truck, delivery, ambulance, jitney, furniture and undertakers' bodies. The demand is here for all these **ON THE DODGE.**

We Make Bodies for All Chasses

SEND FOR OUR NEW DODGE CATALOG

H. H. BABCOCK COMPANY

WATERTOWN, FOUNDED 1845 NEW YORK.

Digitized by Google

GET ACQUAINTED WITH AMAZON

ANNOUNCEMENT

TO JOBBERS AND DEALERS

This announcement is the first of a series of advertisements that will appear regularly in this publication under the caption of "Getting Acquainted With Amazon."

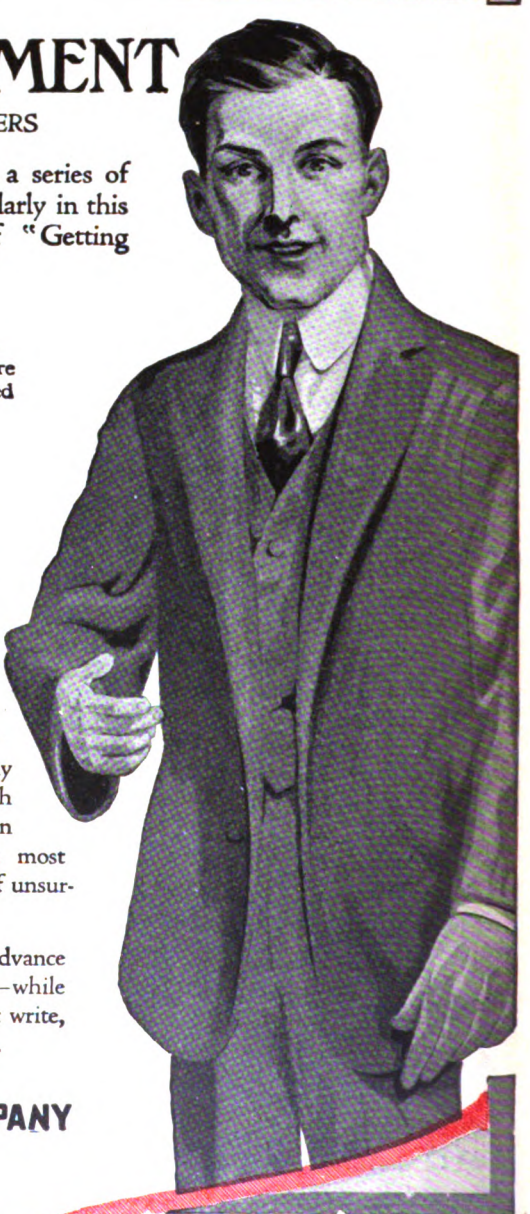
Various points to be discussed are:

1. The TREAD of the Tire
2. The CARCASS of the Tire
3. Exclusive Territory Offered
4. Free Advertising
5. The PROFITS
6. Permanent Customers
7. Our Cordial Relations
8. PROOFS of all Claims

To enable you to easily recognize and follow these discussions as they appear, the same figure will be used throughout the series—look for his cordial smile—it is indicative of Amazon.

By the time you have read the entire series, we are sure you will be seeking our proposition to jobbers and dealers. Many will not wait—but will get in touch with us and secure full advance information direct from the factory. We have a most interesting proposition—and a TIRE of unsurpassable merit to back it up.

If YOU would like to learn now in advance the details of what we have to offer—while your competitor may be "waiting"—just write, wire, phone or call on us here in Akron.



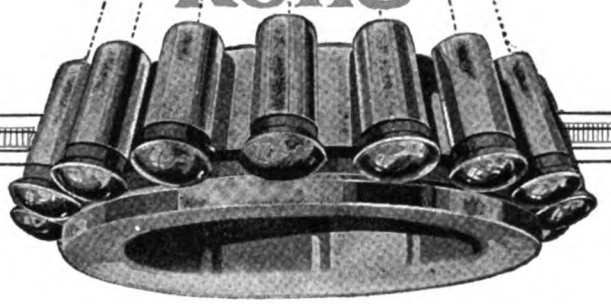
THE AMAZON RUBBER COMPANY

AKRON, OHIO

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BOCK

Everything Rolls



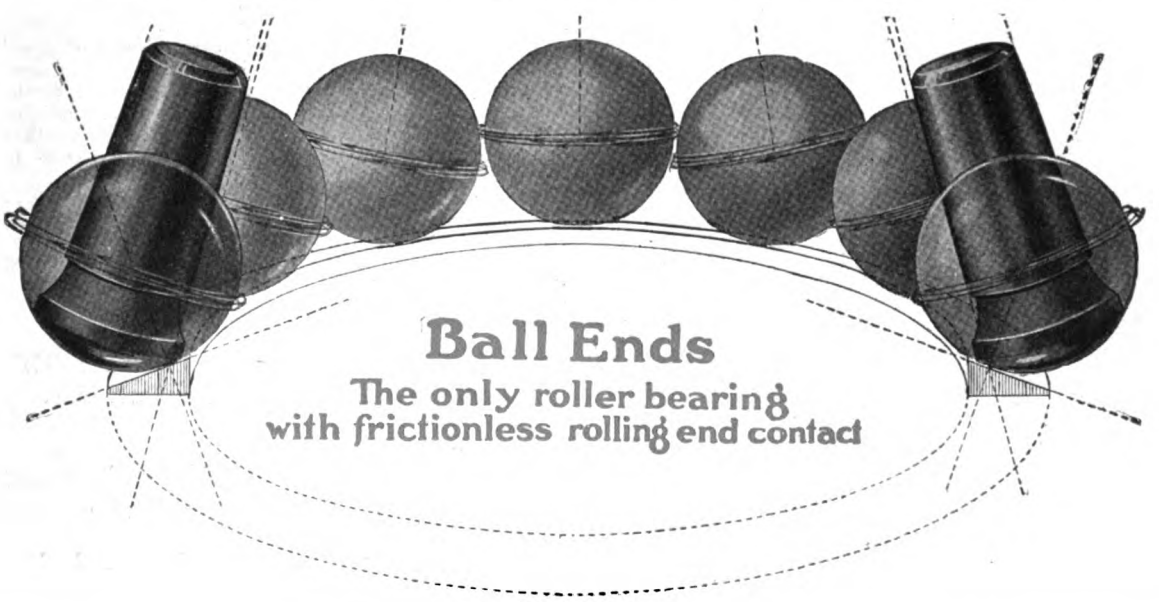
In the Bock Bearing everything rolls. Every load carrying contact, radial as well as thrust, is a frictionless rolling contact.

The end of each roller is rounded—*an exclusive Bock feature*. It rolls in unison with the tapered rollers, making the contact frictionless.

End friction has always proved the weak point in roller bearing construction. That's why engineers everywhere were quick to see the advantages offered in the Bock design.

And in addition to this exclusive feature, the Bock gives you all the load carrying capacity of *any* roller bearing.

The Standard Parts Company, Bock Bearing Division Toledo, Ohio



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SUNDERMAN
Vacuum Carburetor

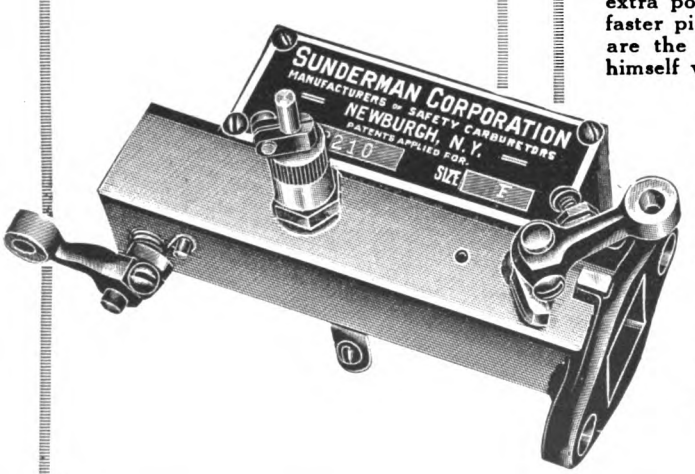
$6

F. O. B.
Newburgh

For all other cars the prices are $8 and $10, depending on the fittings required. Its service is supreme on all makes and models of cars.

Save with the
SUNDERMAN

Start Easily in Cold Weather—and start NOW. The Sunderman is the ideal winter carburetor—and it's a winner all the year around.



Wins in Winter Because of Easy Starting

Car owners dread the approach of cold weather because of **starting** difficulties. Yet millions of them want to use their cars every week in the year—they are **passenger** cars now—not simply vehicles of **luxury** or convenience.

Mr. Dealer, you've got to show them how to operate their cars without discomfort—you've got to make those cars *start easily*. Otherwise you won't listen to the music of the cash register very often—you won't relish the tune of "all going out and nothing coming in."

Make Starting Easy for Your Customers—Sell them the SUNDERMAN Carburetor

They need only follow our simple directions to start their cars on a quarter turn. They did it in Canada last winter—some of our most enthusiastic customers hail from Canada's coldest quarters.

Try It for Yourself—PROVE It and then PUSH for the Business

At the same time, remember that every time you sell a Sunderman Carburetor you are helping the customer to save from 30 to 50 per cent of gasoline—no matter what his car. Hundreds of letters in our files show that owners are making even greater savings.

But over and above all that—keen drivers who love to "play" with their cars find that the Sunderman Carburetor gives a motor efficiency that seemed impossible.

Taking steep hills on high with a full-hearted burst of speed; securing a speed range from the crawling three miles an hour up to sixty on some cars with the utmost flexibility; getting extra power that never seemed to be in the motor; finding a faster pick-up, an acceleration never before discovered—these are the points of superiority any driver can experience for himself with a Sunderman.

The Sunderman mixing principle does the work—it makes gasoline yield a greater percentage of energy—its punch—than any other carburetor offered.

Car owners, send your orders in to-day—we'll fill them the day received—get the benefit of this supreme instrument at once.

Dealers, Send Your Sample Orders NOW—Begin To-day to Get the Business.

Sunderman Corporation

9 Chambers Street Newburgh, N. Y.

Western Office: 403 Kresge Building, Detroit

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SINGER
Auto Traffic Signal

"The Signal Success"

Here is a traffic signal that does away with the uncertain, careless and inadequate hand signaling. It substitutes a safe, sure, unmistakable signal that is dignified and refined, and easier to operate than the signal by hand.

Easy to Install—Easy to Sell

The Singer Signal can be installed easily and quickly by any good mechanic. It will fit on any car. Easy to sell because there is a real need for a satisfactory signal.

We predict that the Singer Signal will duplicate the history of the self starter. Before the first starters were built everybody cranked his own car, because there was no other way. It was only a short while until cars without starters were obsolete. Now that there is a better way than hand signaling, the motoring public won't be satisfied with any car which isn't equipped with a Singer Signal.

In time we believe city ordinances will require some such signal, just as they now require horn signals. Already the Singer Signal has been endorsed by the traffic authorities in every city where it has been shown.

Big Opportunity for Dealers and Garage Men

The Singer Signal can be put on any car. A car owner can indulge his desire for one without waiting for the new cars to come equipped with them. Here is a ready to supply business for live dealers and garage men. There is a good profit for the dealer in each Singer Signal.

Remember—the cream is at the top and is the first to be removed. Don't wait, but investigate at once.

General Distributers Wanted The Singer Signal is manufactured by men of national standing in the automobile business. We want men or firms of like responsibility to act as general representatives or distributers. Exclusive territory for supplying jobbers and retailers will be granted to the right party in each territory. Apply at once.

Singer Auto Traffic Signal Co.
2830 Locust St., St. Louis, Mo.

Instantly signals your intention to oncoming and following traffic

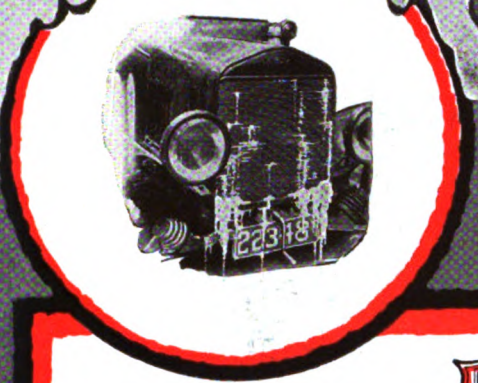
Press button on dial without removing hand from steering wheel. Your movements — to RIGHT—LEFT—STOP—BACK—are instantly flashed from both front and rear of your car. "AHEAD" Signal constantly displayed except when displaced by another signal. STOP Signal (in red) automatically controlled by foot brake. Impossible to STOP or slow up without warning those behind you.

Clearly readable 100 feet away, day and night. Illuminated at night. Traffic officers don't mistake Singer Signals. Pilot light flashes on when signal is displayed—proof that signal is operating.

The Singer Signal is housed in two handsome enameled cases (7 x 6 in.). One front, one rear. An ornament to any car—adds to its appearance and greatly increases the safety and pleasure of driving. An absolute necessity on closed cars, all the time, and on every car at night. Ladies especially appreciate the Singer Signal—as a refined and ladylike method of signaling.

The Singer Signal is no experiment. It has been rigidly tested for 3 years, and has proven dependable, durable and necessary. Operated from car battery without appreciable use of current.

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WHY TAKE A CHANCE?

H-M ADJUSTABLE

Adjustable **METAL** Radiator Cover for All Model Ford Cars

Attach this wonderful **metal** radiator cover and enjoy the pleasures of winter motoring without the troubles and discomforts.

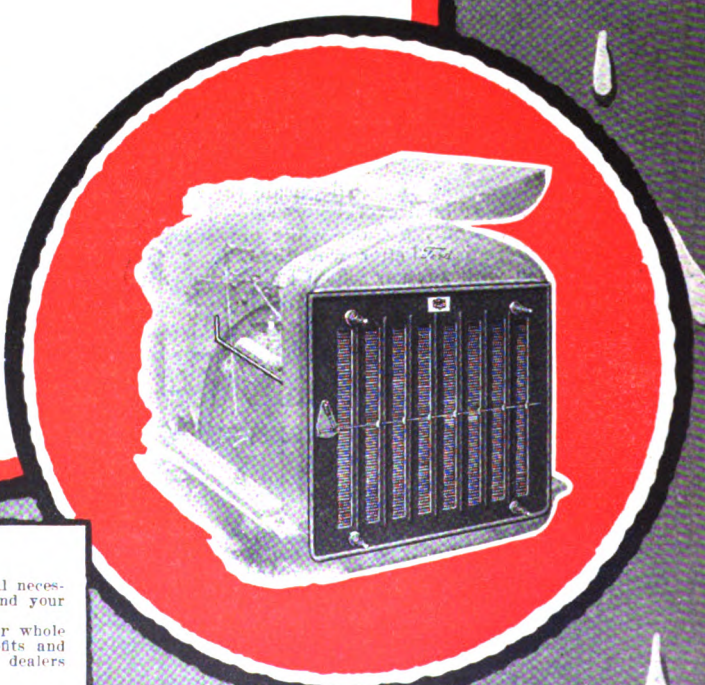
No danger of water freezing with consequent breaking of radiator and cracking of cylinders. No cranking for twenty or thirty minutes in the cold and slush and snow. No fumbling with numbed fingers at a frozen leather roll or blanket.

Drive Your Ford All Winter

In the coldest weather—zero days. Let it stand for hours in the street, then start your engine at once.

H-M Adjustable **Metal** Radiator Covers are operated from the seat. When riding set at quarter, half, three-quarter or fully open. When about to stop, turn the handle in the dash and the cover is tightly closed and your motor and radiator will be warm for hours.

It is made of sheet metal and will last many seasons. One winter's saving in fuel will more than pay for it. Attach it yourself in a few minutes.



Price $5.00

Call at your dealer. If he cannot supply you, write us direct.

H-M Manufacturing Company
Department 18
122 South Michigan Avenue
CHICACO

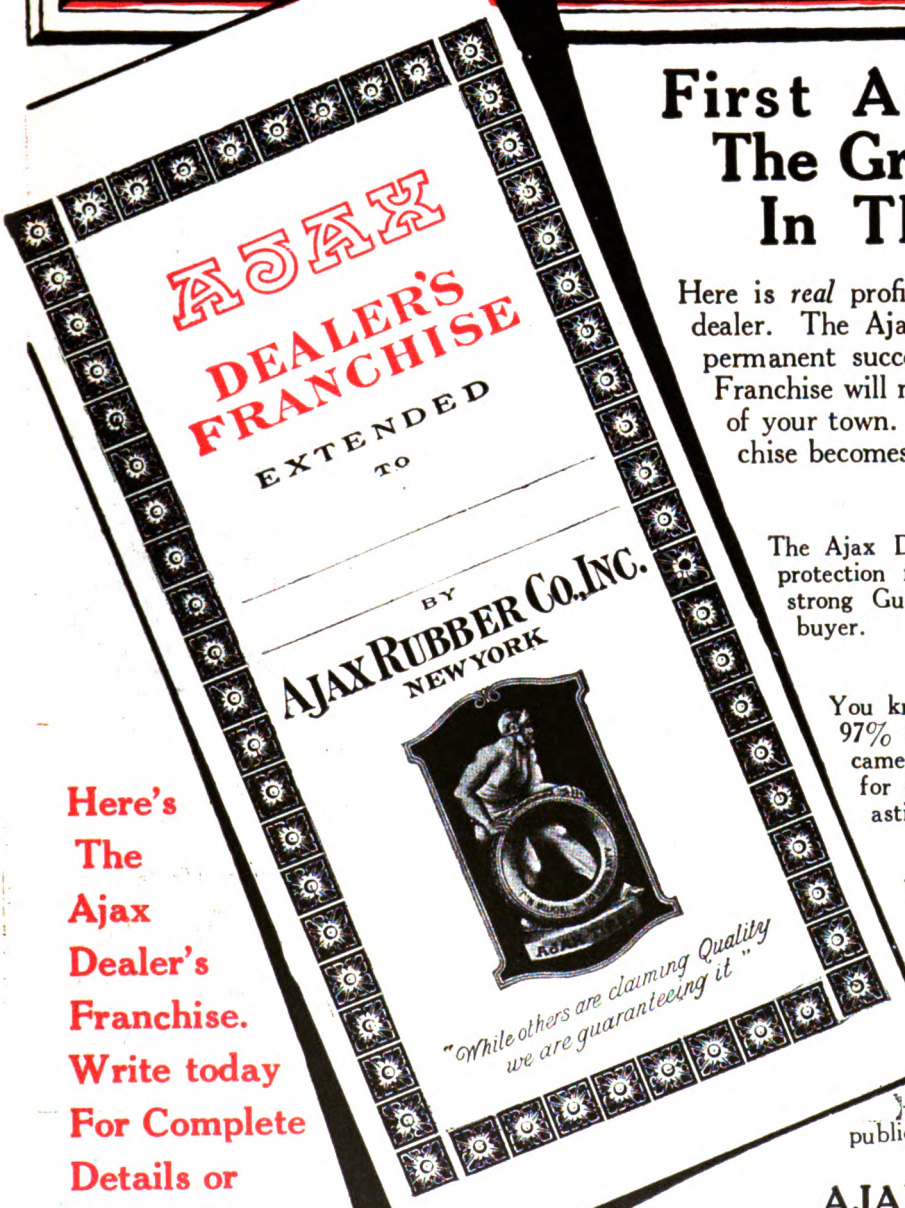
DEALERS

H-M Covers are not a luxury. They are an absolute practical necessity in cold weather. Let them boost your winter business and your winter profits. They will do it. They sell.

Write or wire for complete information, prices, discounts—our whole interesting offer that means money in your cash drawer. Profits and H-M covers are Winter Necessities that come together to dealers everywhere.

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AJAX Dealer's Franchise!



First Announcement of The Greatest Opportunity In The Tire Business!

Here is *real* profit opportunity for the wide-awake tire dealer. The Ajax Dealer's Franchise shows the way to permanent success in your locality. The Ajax Dealer's Franchise will make your store the dominating tire store of your town. Year after year the Ajax Dealer's Franchise becomes more valuable.

Dealer Protection

The Ajax Dealer's Franchise carries strong "in-writing" protection for the dealer, just as Ajax Tires carry a strong Guarantee in Writing 5000 Miles to the tire buyer.

97% Owners' Choice

You know the great quality of Ajax Tires proved by 97% Owners' Choice — to replace other tires which came with their cars. Take the Ajax Road King for example—never has any tire been so enthusiastically endorsed by user and dealer alike.

Dealers Free Service Bureau

With the Ajax Dealer's Franchise comes specific local help—on-the-spot service rendered by the Ajax Dealer's Free Service Bureau. This is a new department—an organization of merchandising experts, to help the dealer make more money. A line of sales for every dealer will be established by the great 1918 Ajax National advertising Campaign —hundreds of thousands of dollars in leading publications. The time to act is NOW!

Here's The Ajax Dealer's Franchise. Write today For Complete Details or WIRE COLLECT!

AJAX RUBBER COMPANY, Inc.
1796 Broadway Dept. B New York City

While Others are Claiming Quality, We are Guaranteeing It

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Latest and Best Automobile Books

By Victor W. Page, M. E.

The Model T Ford Car, Its Construction, Operation and Repair

By Victor W. Pagé, M.E.

This is a complete instruction book. All parts of the Ford Model T Car are described and illustrated; the construction is fully described and operating principles made clear to everyone. Every Ford owner needs this practical book. New edition. 75 illustrations, 200 pages. Large folding plate.

Price, $1.00.

Starting, Lighting and Ignition Systems



By Victor W. Pagé.

A practical treatise on modern starting and ignition system practice. Includes a complete exposition of storage battery construction, care and repair. Explains all types of starting motors—generators—magnetos and all ignition or lighting system units. Considers the systems of cars already in use as well as those that are to come in 1917. A book every one needs. Nothing has been omitted, no details have been slighted. A book you cannot afford to be without.

Nearly 500 pages. 297 Specially Made Engravings. 1917 Edition. Price, $1.50.

Automobile Repairing Made Easy

By Victor W. Pagé, M.E.

A thoroughly practical book containing complete directions for making repairs to all parts of the motor car mechanism. Written in a thorough but non-technical manner. Will be found of special value to garage-men, chauffeurs and automobile mechanics; it also contains a mass of general information that will be of equal value to the motorist who takes care of his own car.

This book contains special instructions on electric starting, lighting and ignition systems. Tire repairing and rebuilding. Autogenous welding. Brazing and soldering. Heat treatment of steel. Latest timing practice. Eight and twelve-cylinder motors, etc., etc. A guide to greater mechanical efficiency for all repairmen.

1,000 Specially Made Engravings on 500 Plates. 1,056 Pages (5½ x 8), 11 Folding Plates. 1917 Edition. Price, $3.00.

How to Run an Automobile

By Victor W. Pagé, M.S.A.E.

This treatise gives concise instructions for starting and running all makes of gasoline automobiles, how to care for them, and gives distinctive features of control. Describes every step for shifting gears, controlling engines, etc. Thoroughly illustrated.

Price, $1.00 net.

The Modern Gasoline Automobile

By Victor W. Pagé.

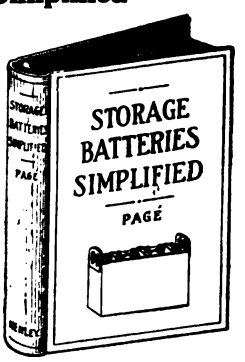
The most complete treatise on the gasoline automobile ever issued. Written in simple language by a recognized authority familiar with every branch of the automobile industry. Free from technical terms. Everything is explained so simply that anyone of ordinary intelligence may gain a comprehensive knowledge of the gasoline automobile. The information is up to date and includes, in addition to an exposition of principles of construction and description of all types of automobiles and their components, valuable money-saving hints on the care and operation of motor cars propelled by internal combustion engines.

The book tells you just what to do, how and when to do it. Nothing has been omitted, no detail has been slighted.

1000 Pages. 1000 Illustrations. 12 Folding Plates. 1918 Edition. Price $3.00.

Storage Batteries Simplified

By Victor W. Pagé, M.E.



A comprehensive treatise devoted entirely to secondary batteries and their maintenance, repair and use.

This is the most up-to-date book on this subject. Describes fully the Exide, Edison, Gould, Willard, U. S. L. and other storage battery forms in the types best suited for automobile, stationary and marine work. Nothing of importance has been omitted that the reader should know about the practical operation and care of storage batteries. No details have been slighted. The instructions for charging and care have been made as simple as possible. 250 pages. Very fully illustrated.

Price, $1.50.

The Automobilist's Pocket Companion and Expense Record

Arranged By Victor W. Pagé, M.S.A.E.

This book is not only valuable as a convenient cost record, but contains much information of value to motorists. Includes a condensed digest of auto laws of all States, a lubrication schedule, hints for care of storage battery and care of tires, location of road troubles in all parts of the car, anti-freezing solutions, horse-power table, driving hints and many useful tables and recipes of interest to all motorists. Not a technical book in any sense of the word, but a collection of practical facts in simple language for the everyday motorist.

Convenient pocket size, handsomely bound in limp leatherette cover. Price, $1.00.

Automobile Questions and Answers

By Victor W. Pagé.



This practical treatise consists of a series of thirty-seven lessons covering well over 2,000 questions and their answers on the automobile, its construction, operation and repair. The subject matter is absolutely correct and explained in simple language. If you can't answer all of the following questions you need this work. The answers to these and 2,000 more are to be found in its pages.

Give the names of all important parts of an automobile and describe their functions. Describe action of latest types of kerosene carburetors. What is the difference between a "double" ignition system and a "dual" ignition system? Name parts of an induction coil. How are valves timed? What is an electric motor starter, and how does it work? What are advantages of worm drive gearing? Name all important types of ball and roller bearings, etc., etc.

650 Pages. 350 Illustrations and Plates. 1917 Edition. Price, $1.50.

Location of Gasoline Engine Troubles Made Easy

This chart shows clearly all parts of a typical four-cylinder gasoline engine of the four-cycle type. It outlines distinctly all parts liable to give trouble and also details the derangements apt to interfere with smooth engine operation.

It simplifies location of all engine troubles, and while it will prove invaluable to the novice, it can be used to advantage by the more expert. This sectional view of engine is a complete review of all motor troubles. It is prepared by a practical motorist for all who motor. More information for the money than ever before offered. No details omitted. Size 25 x 38 inches. Securely mailed on receipt of

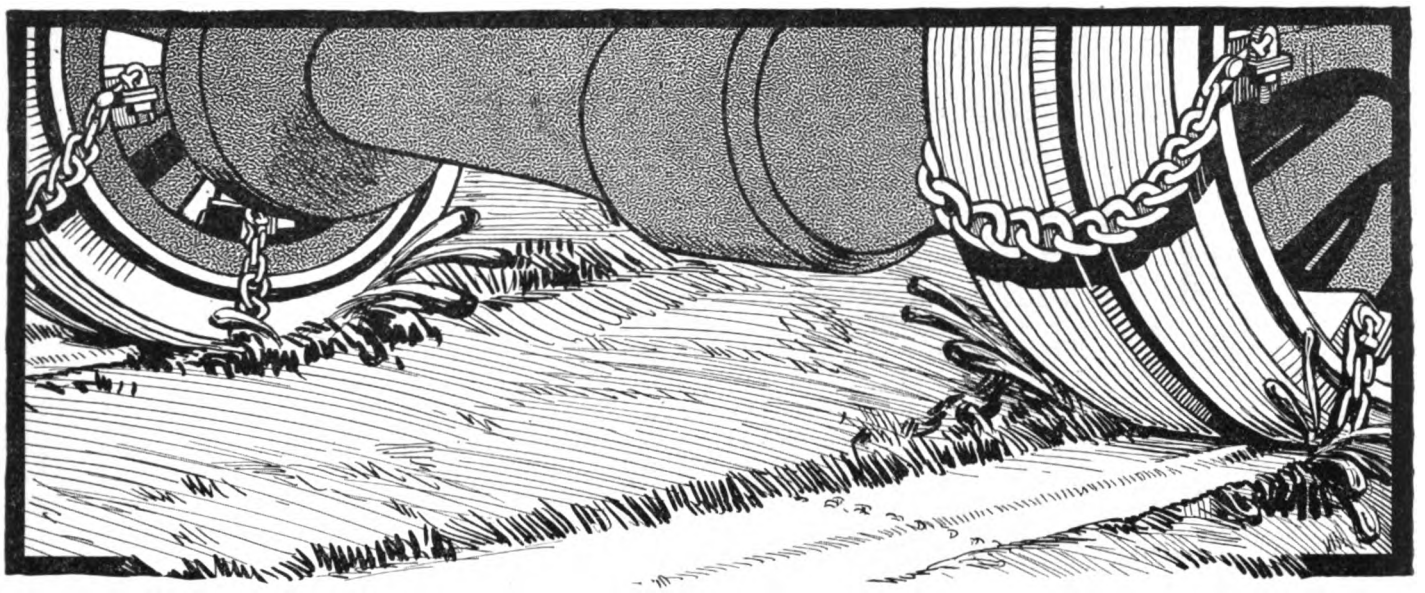
Price 25 cents.

Any of these books sent prepaid on receipt of price, or a special circular of all our Automobile Books and Charts sent on request. FREE—Our new Catalog of Practical Books sent free on request.

THE NORMAN C. HENLEY PUBLISHING CO.

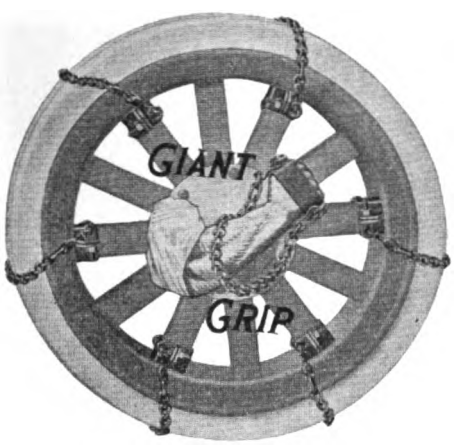
2 West 45th Street, New York

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On the Traction of These Wheels Thousands of Dollars' Worth of Business May Depend

The difference between success and failure in many kinds of business is delivery on time, and delivery delayed. The difference between new contracts with re-orders, and cancellations, may be measured by the time your trucks are stuck in the mud, or sliding around over icy pavements.



For Motor Trucks

Solid Tires Only

The Giant Grip That Can't Let Go

Giant Grip Non-Skid Chains Will Pull Them Through

GIANT GRIP Non-Skid Chains for motor trucks are quickly and easily attached when you need them—**with all 4 wheels on the ground.** No jacking up or long chains to unravel. The hooks are attached to the **outside** of the clamps for **convenience and speed** in fastening.

GIANT GRIP Cross Chains are attached to the clamps **without the use of any tools.** Clamps remain permanently attached to wheels while cross chains are instantly removed or replaced. **This is an exclusive GIANT GRIP feature.** And on account of their construction **they cannot work loose.**

Trucks that set out with GIANT GRIP Non-Skid Chains get where they are going without delay from sticking in the mud, or slipping on icy streets. They save their price the first time you use them.

Big Sellers, with liberal discounts for dealers. Write for descriptive circular giving detailed information concerning grips for various makes of trucks.

CHALLONER CO. Oshkosh, Wisconsin

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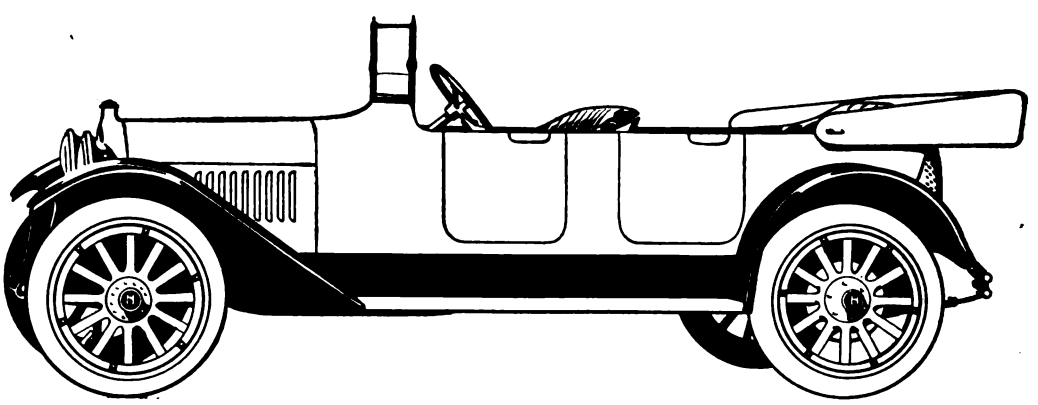
Hupmobile

The Hupmobile calls in clarion tones to those seeking more-for-the-money in motor cars.

In every essential of value, it is convincing the more careful buyers of its supremacy.

The years have established Hupmobile quality. Its four-cylinder performance is not surpassed, if indeed it is equalled, by other cars with more cylinders.

HUPP MOTOR CAR CORPORATION
DETROIT, MICH.



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DAYTON

QUICK DETACHABLE WIRE WHEELS

MADE UNDER LICENSE

For Ford Cars

QUICK CHANGE

Five detachable and interchangeable wheels and four inner hubs make a set. Unscrewing and replacing the hub cap is all that is necessary to change the wheels. The spare wheel may be carried with tire inflated, ready for instant mounting. A very essential feature in winter driving.

ECONOMY

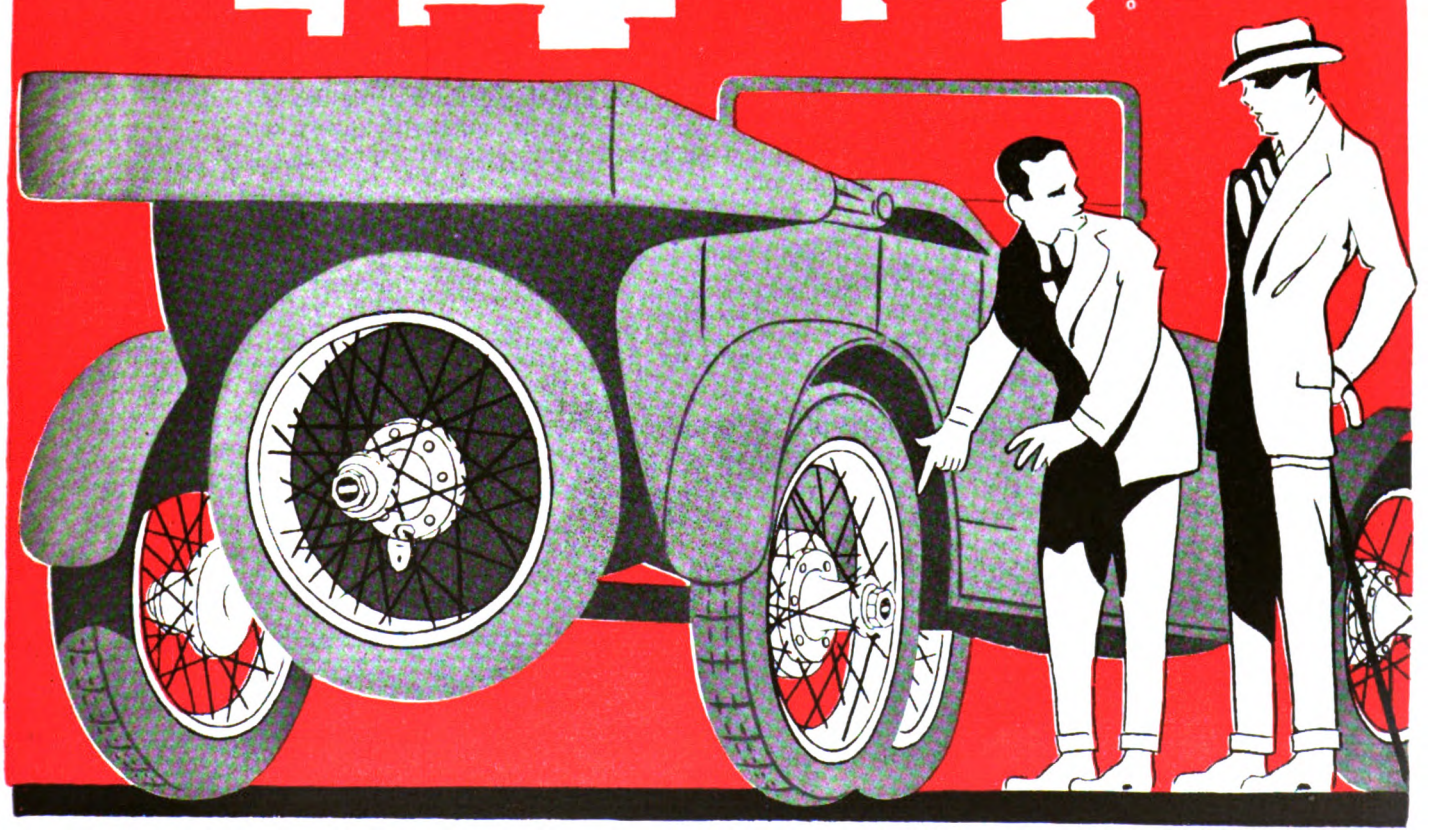
A 5,000 mile tire becomes a 6,250 mile tire when mounted on Dayton Wire Wheels. This is due to heat radiation and the remarkable resiliency of the "Daytons." Furnished in any desired color.

DEALERS AND JOBBERS

There are excellent profit possibilities in Dayton Wire Wheels. Get your share of the profits.

DELIVERIES AT ONCE!

THE DAYTON WIRE WHEEL COMPANY, 826 Miami Road Dayton, Ohio



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Announcement

MILLER CARBURETOR DISTRIBUTORS, Incorporated, announce the opening of a new and spacious Chicago Branch Office and Service Station at 2351-2359 Indiana Ave., in personal charge of Mr. F. B. Lightner, the well-known racing driver and carburetor expert.

Preparatory to the biggest drive Miller Carburetors have ever made in this part of the country, additional dealers are now being appointed and an extremely efficient sales organization perfected. This affords an exceptionally interesting opportunity for dealers of proper qualification.

Thousands upon thousands of carburetors will have to be changed this winter to handle lower grades of fuel now prevalent. Miller Carburetors are specially designed to handle with greatest efficiency the poorest gasoline. They meet the emergency.

Miller Carburetors

The Modern Carburetor for Modern Fuel

The result of fifteen years of carburetor development, this carburetor is the last word in Successful Carburetion. It gives you more power, quicker get-away and greater mileage. It needs no adjusting—once set, always set. Fool proof. Air and gasoline always in true proportion.

Multiple jet. Automatic in action. No springs. More economy and flexibility. Choking and loading impossible.

Miller dealers are capitalizing this fact—making numerous replacements—doing a record-breaking business. Miller Carburetors will increase *your* winter business. Wire, write or use the coupon for full information.

MILLER CARBURETOR DISTRIBUTORS, Inc.
2351-2359 Indiana Avenue, Chicago

MILLER CARBURETOR DISTRIBUTORS, Inc.
256 Broadway, New York

Manufacturer: HARRY A. MILLER MFG. CO.
219 East Washington St., Los Angeles, California

COUPON

Miller Carburetor Distributors, Inc.
2351-2359 Indiana Avenue, Chicago.

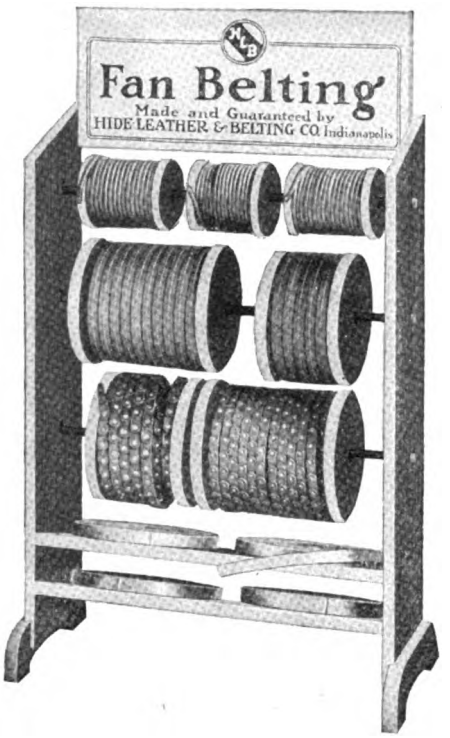
Please send without obligation full praticulars regarding your dealer proposition.

Name .....

Address .....

.....

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Sell More Fan Belting With This Free Rack

FAN BELTING SALES are materially increased for dealers who stock HLB fan belting in this attractive rack. For your goods are out where every customer can *see* them then. Many customers enter your store who need a new fan belt but for some reason or other can't remember to buy one. The rack *suggests* the purchase of a fan belt to them—and brings you added sales and profits.

Lends attractiveness to your store and shows you at all times the condition of your stock. With this rack your fan belting is all together in one place—where you can get at it easily and quickly. Rack measures 3 ft. high, 2 ft. wide and 1 ft. deep. Made of wood, handsomely finished and surmounted by beautiful steel sign, lithographed in brilliant colors, which attracts attention to your stock and helps make sales.

Rack furnished free to dealers ordering our fast-selling assortment of HLB fan belting—fan belting that has back of it almost fifty years of successful belt-making experience—fan belting that's used and endorsed by a majority of leading pleasure car and truck manufacturers.

All HLB fan belting—(round, "V" or flat)—is now packed in standard spools and rolls so it can be displayed in this convenient new rack. The attached coupon will bring you full details of this desirable rack and our attractive proposition to dealers—together with the name of jobber nearest you. Sign and mail it—*now.*

HLB Write

Hide, Leather & Belting Company

227D S. Meridian Street, Indianapolis

FLAT, ROUND *and* "V" *Fan Belting,* LEATHERTEX *Cone Clutch Facings,* RAWHIDE CUT LACING, LEATHER STRAPS, *Etc., Etc.*

Hide, Leather & Belting Co., Indianapolis

Please tell me more about your new display rack for fan belting, together with details of your attractive proposition to dealers.

Name.....

Address.....

M.W.-10-24-17 .....

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The Buyer's Interest in Wasteless Advertising

BUYERS who appreciate that waste in selling must eventually be passed on to them in some form, are paying more and more attention to the sales methods of the concerns seeking their business.

The extravagant use of space in publications of general circulation, to advertise a commodity or a service appealing chiefly to a certain well-defined class, is not only poor judgment, but *it is an economic waste.*

Can you imagine an intelligent salesman, with a proposition for a steel mill or a dry goods store, calling at every office in town in an effort to locate a prospect? How needlessly wasteful to adopt similar methods in advertising, which is simply an improved means of accomplishing certain necessary steps of a sale.

On the other hand, the seller who uses the business papers reaching *only* the class interested in his message, is employing the most direct, efficient and economical method of getting in touch with prospective buyers.

Properly used, the good business paper bears the same relation to the sales department, that an improved machine does to the production department. Better selling methods go hand in hand with better manufacturing methods.

To encourage wasteless advertising, the most efficient modern means of bringing buyer and seller together, there is every reason why the discriminating buyer should give preferred consideration to the concern that tells its business story in the buyer's own business paper.

Ask this office anything you want to know about Business Papers or Business Paper Advertising.

THE ASSOCIATED BUSINESS PAPERS · INC.

The International Organization of Trade, Technical and Class Publications

Headquarters, 220 West 42nd Street New York

LIST OF MEMBERS

Each member has subscribed to the 10 "Standards of Practice," a high code of ethics covering all departments of business paper publishing.

Advertising & Selling
American Architect
American Blacksmith
American Exporter
American Hatter
American Machinist
American Paint & Oil Dealer
American Paint Journal
American Printer
Automotive Industries
Automobile Dealer & Repairer
American School Board Journal
Architectural Record
Aviation & Aeronautical Engineering
Boot & Shoe Recorder
Brick & Clay Record
Buildings & Building Management
Bulletin of Pharmacy
Canadian Grocer
Canadian Railway & Marine World
Cement World
Clothier & Furnisher
Coal Age
Concrete
Domestic Engineering
Drygoodsman, The
Dry Goods Economist
Dry Goods Reporter
Electrical Merchandising
Electrical Review & Western Electrician
Electrical World
Electric Railway Journal
Electric Traction
Embalmer's Monthly
Engineering & Mining Journal
Engineering News-Record
Farm Machinery—Farm Power
Furniture Manufacturer & Artisan
Furniture Merchants' Trade Journal
Gas Record
Grand Rapids Furniture Record
Haberdasher, The
Hardware Age
Hide & Leather
Hotel Monthly
Illustrated Milliner
Implement Age
Industrial Arts Magazine
Inland Printer
Iron Age
International Trade
Lumber Trade Journal
Lumber World Review
Manufacturers' Record
Manufacturing Jeweler
Marine Engineering
Metal Worker, Plumber & Steam Fitter
Metallurgical & Chemical Engineering
Modern Hospital
Motor Age
Motor World
National Builder
National Druggist
National Petroleum News
Power
Practical Engineer
Railway Age Gazette
Railway Electrical Engineer
Railway Maintenance Engineer
Railway Mechanical Engineer
Railway Signal Engineer
Retail Lumberman
Rubber Age
Shoe & Leather Reporter
Shoe Findings
Shoe Retailer
Tea & Coffee Trade Journal
Textile World Journal
Transfer & Storage
Western Undertaker
Woodworker

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Thoroughly Tested



UNITED TRUCKS



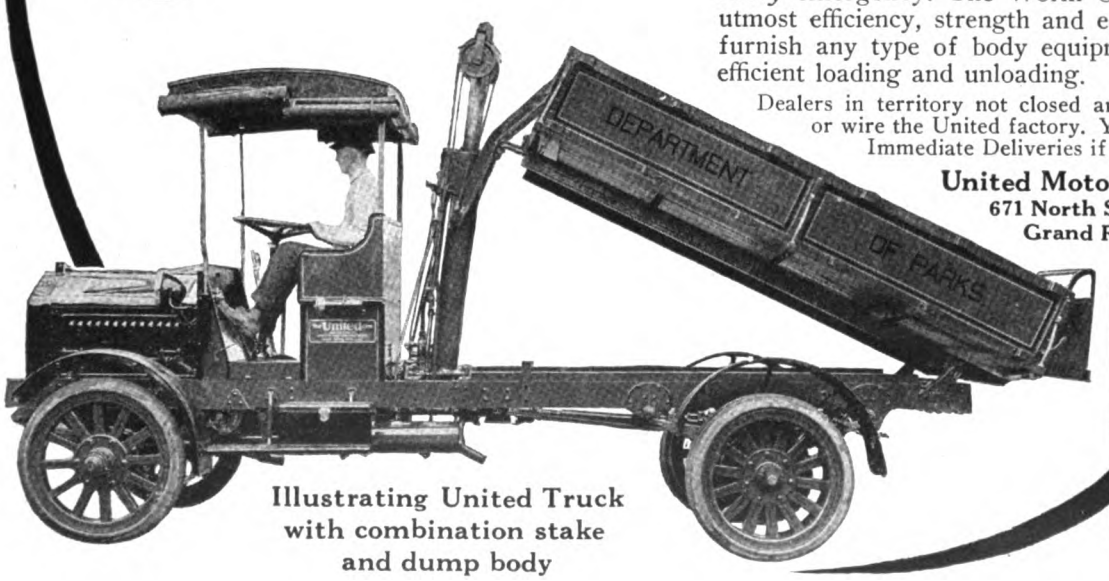
2-ton 3½-ton 4-ton 5-ton

The picture above illustrates the extreme test of every United. Each chassis is loaded with huge concrete blocks and the truck is rigidly tried and tested on the most difficult, hilly country roads. It must respond perfectly before shipment is made.

The famous United power plant is dependable in *every* emergency. The Worm Gear Drive insures utmost efficiency, strength and economy. We can furnish any type of body equipment desired for efficient loading and unloading.

Dealers in territory not closed are invited to write or wire the United factory. You are assured of Immediate Deliveries if you act now.

United Motors Company
671 North Street
Grand Rapids, Mich.



Illustrating United Truck with combination stake and dump body

Write for CATALOG of the United Line

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GUARDED



LET HALLADAY PROTECT

Your car front and rear

HALLADAY BUMPERS

Offer your car the most effective protection from damage through collisions. They protect your radiator and your fenders as well as the rear of your body.

The coil springs contained in the frame fittings gently absorb the shock of the slight "run ins" so unavoidable in congested traffic.

There is a protective giant in the form of a Halladay Bumper to fit every car on the road today. Equip for safety now and be sure to specify HALLADAY.

L. P. HALLADAY COMPANY **Streator, Illinois**

Distributors: Asch & Co., 16-24 W. 61st St., New York City; E. L. Thompson Co., 817 Boylston St., Boston, Mass.; Gray-Heath Co., 1440 Michigan Ave., Chicago, Illinois; Sanford Brothers, Chattanooga, Tenn.; Southern Distributors: Hughson & Merton, Inc., San Francisco, Los Angeles, Portland and Seattle, Pacific Coast Distributors.



GARDNER GARAGE PUMPS and OUTFITS



Fit the Requirements of Every Garage

Garage Air Compressors, Air Wagons, Automatic Stationary Free-Air Units, "Midget" Portable Pumping Units are all built to give the best in price and service to garage and repairmen in large and small shops alike.

Gardner "Gee Gee" Air Compressor

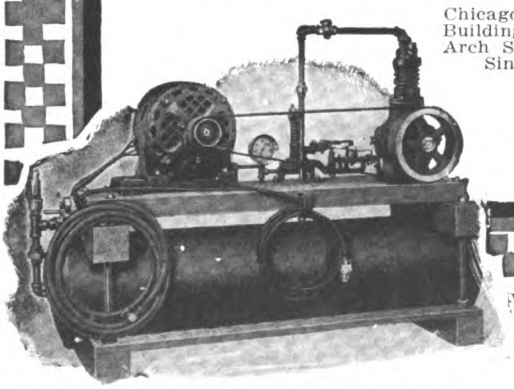
Durable, dependable, with few parts, high speed, dust and dirt-proof, self-oiled, without grease or oil cups, occupy small floor space, cylinder and crank case cast separately.

GARDNER Booklet AC-14 is the very latest on garage pumping equipment. *Ask For It Today.*

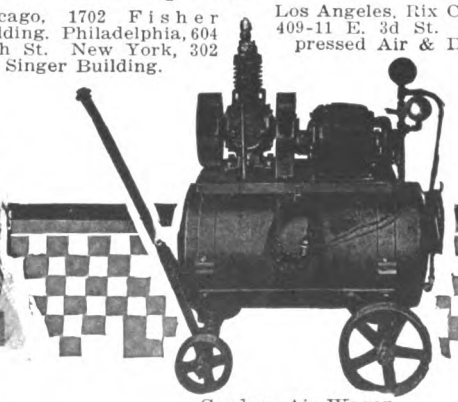
The Gardner Governor Company, 144 Williamson St., Quincy, Ill.

Chicago, 1702 Fisher Building. Philadelphia, 604 Arch St. New York, 302 Singer Building.

Los Angeles, Rix Compressed Air & Drill Co., 409-11 E. 3d St. San Francisco, Rix Compressed Air & Drill Co., 505 Howard St.



Gardner Automatic Stationary Free Air Unit



Gardner Air Wagon

Gardner "Midget" Portable Pumping Unit.



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For Quick, Handy Air Service
At Small Expense

Black & Decker
LECTROFLATER
Electric Air Compressor

No. 2 Wall Type Outfit

An outfit that is quick and powerful, yet very economical to operate. Requires no wiring, no belting, no piping, no truck—none of the costly—and wasteful—appliances which most air pressure systems require.

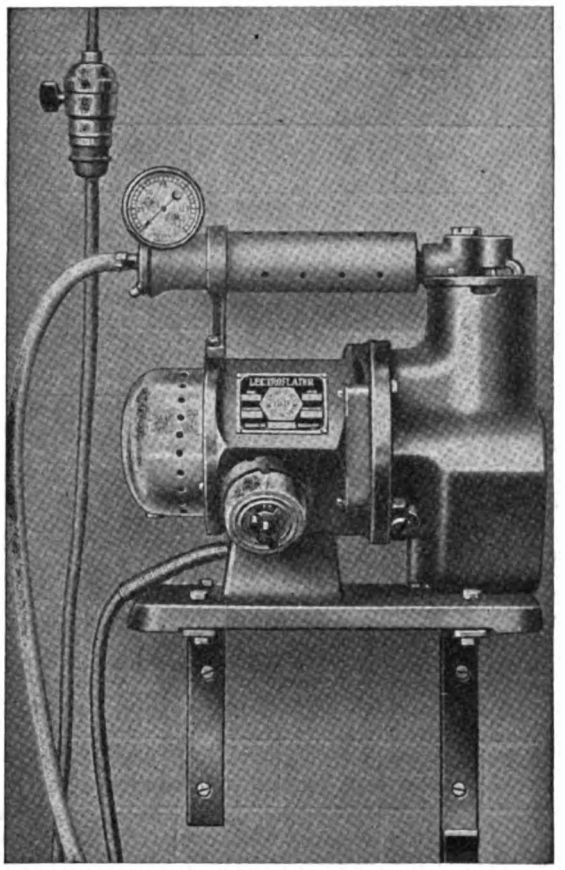
To operate, attach to any electric light socket, either A.C. or D.C., and turn the switch—that's all. Costs very little to run; will inflate ten tires at a cost of one cent for current.

Can be carried about or mounted permanently on brackets (supplied by us) in any out-of-the-way place. An ideal outfit for Garages, Service Stations, Tire Shops, etc. Built to stand hard, continuous service. Fully guaranteed.

Write today for illustrated booklet "A Friendly Touch" describing the entire line of "Lectroflater" electric air compressors. Many types and sizes, including curb outfits. Prices from $50 up.

Black & Decker Mfg. Co. 109 South Street Baltimore, Md., U. S. A.

Distributors in Canada, Northern Electric Company LIMITED Montreal



REG. U.S. PAT. OFF.

GTD

Look for the GTD trade mark when you want the best Taps and Dies

Every garage and repair shop should be equipped with "LITTLE GIANT" Combination Screw Plates. Furnished both in U.S. and S.A.E. Standards.

Each die is contained in its own collet and adjusted to size. There is also a Bit Brace Die Holder for cleaning up battered threads in out-of-the-way places.



If you are a manufacturer, garage or repairman—or a car owner who makes his own repairs—you can be supplied from our big established line.

Write today for the No. 37 Catalog

Greenfield Tap & Die Corporation
Greenfield Mass.

New York, 28 Warren St.
Chicago, 13 S. Clinton St.
Canadian Factory: Wells Brothers Co. of Canada, Ltd., Galt, Ontario.

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25¢ each

The HANDY TERMINAL

Eliminates *All* Terminal Troubles—

No burned fingers—no lost nuts in drip pan—no loose connections

Most ignition troubles can be traced directly to loose connections caused by vibration and jar. The Handy *can't* work loose—the greater the vibration the tighter the jaws of the Handy grip—the better the electrical contact.

The jaws of the Handy are threaded on the inside and engage the threads of the Spark Plug center bolt. One motion raises the ring, compresses the steel spring, releases the terminal and lifts it from the spark plug. There are no nuts to tighten or loosen or fish out of the drip pan. No tools are required. Can be attached or detached in *one second*.

The method of fastening the magneto cable insures a permanent connection. The ferrule is fitted to the cable and the stripped wire firmly held by a copper clip making a non-soldered connection that can't work loose.

The Handy is the last word in convenience and efficiency. Made in 3 sizes to fit *every* make of spark plug, for pleasure cars, motorcycles, trucks, motor boats, airplanes, etc.

Hardware Dealers

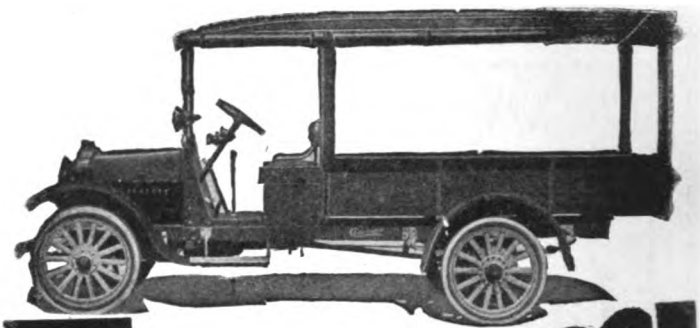
Because the Handy Terminal eliminates ALL terminal troubles and is a great time and trouble saver it is a great seller. National advertising campaign now running—attractive dealer helps.
Write for attractive dealer's proposition.. If your jobber can't supply you with the Handy, send us his name and we will see that your requirements are filled promptly. Get your share of this business now—Write Today.

THE FRANCIS-RAND CO.

Manufacturers of

HANDY PRODUCTS

406 Erie Building, CLEVELAND, U. S. A.



Commerce

TRUCKS
1 TON CAP

A Year Ahead *of* Other Trucks

The only truck having everything necessary on it—when you buy it

Three types of bodies for all models—Remy Starting and Lighting—Stewart Vacuum System—Pierce Governor—Windshield—Bumper.
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One-Ton Chassis	$1240
With Express Body	1375
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The Commerce Motor Car Company
DETROIT MICHIGAN

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New 1916 Edition of Questions and Answers

By Victor W. Page, M. E.

$1.50



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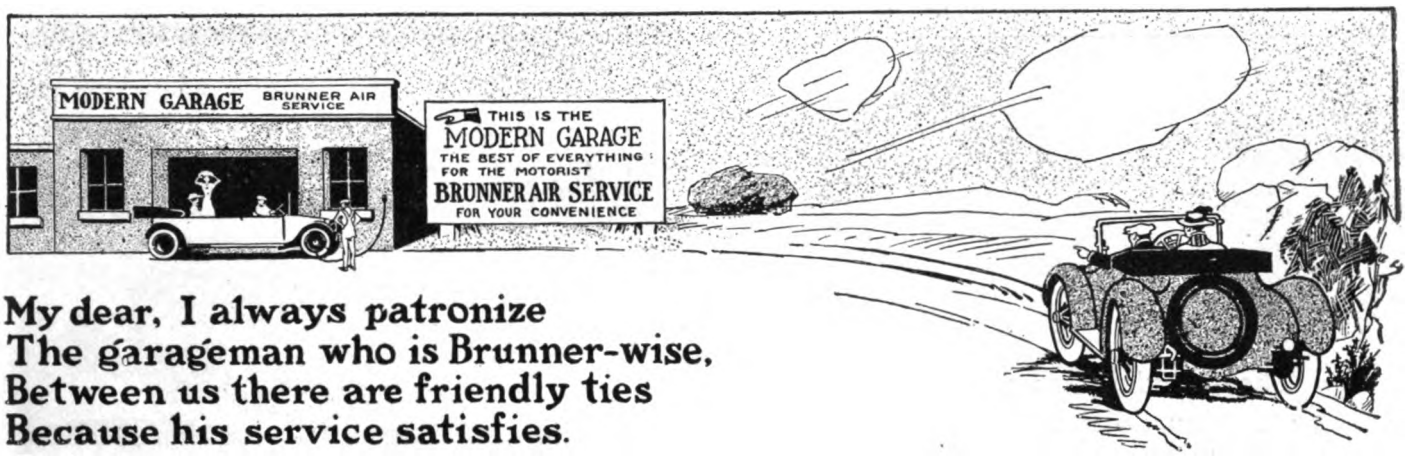
On Modern Automobile Design, Construction, Driving and Repair

Just off the press. A practical self-educator, consisting of 37 progressive lessons. Contains over 600 pages. Profusely illustrated with photographs and drawings of practical working parts. Includes all the latest developments.

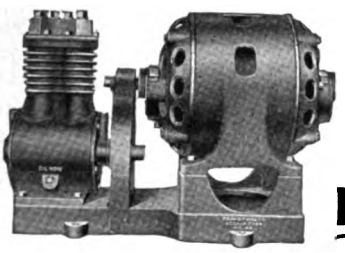
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My dear, I always patronize
The garageman who is Brunner-wise,
Between us there are friendly ties
Because his service satisfies.



Mr. Garageman, the service that satisfies is the service which the motorists will patronize during the winter months. Brunner service would help you through the winter months and prepare you for spring. The garagemen using the Brunner Air Compressor have found it their one best asset the year around.

Investigate the BRUNNER Air Compressor

WE USE A BRUNNER AIR COMPRESSOR
FREE AIR
FOR YOUR CONVENIENCE

Your Jobber is no doubt a Brunner Jobber. If not, let us send you the name of the Brunner Jobber covering your town—also one of our catalogues and handbooks on Compressed Air. Let us help you to make your service one that satisfies.



BRUNNER MANUFACTURING COMPANY

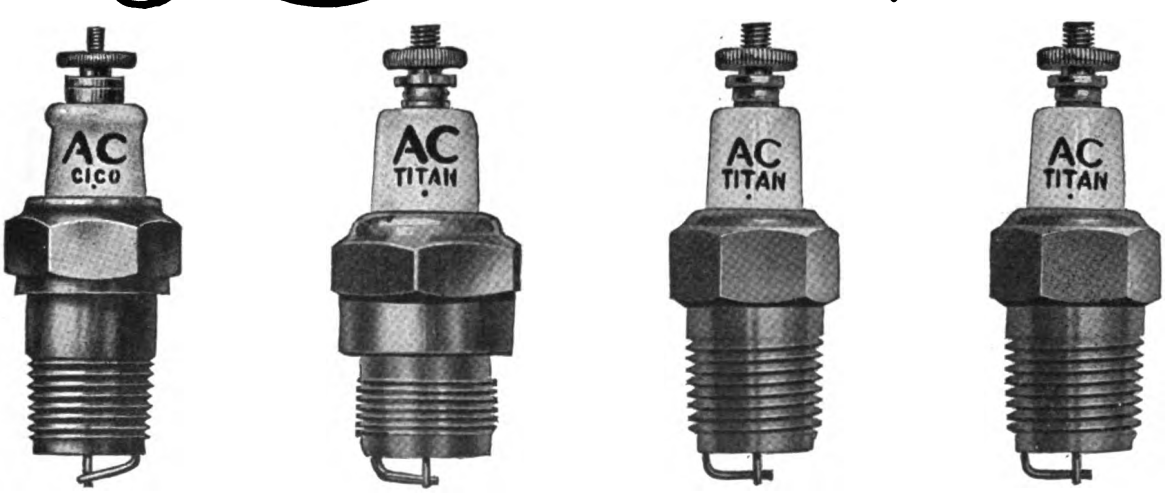
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The Standard Spark Plug of America



Special for Ford Cars
A C CICO

⅝" Regular
For Maxwells
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½" Regular
For Willys-Overland
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For Studebakers
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AC Plugs have proven to be the best under all conditions. That is why 80 manufacturers of Automobiles, Trucks, Tractors and Aeroplanes use them for regular equipment. The leading race drivers are using them. *Your* motor will not give its best performance unless equipped with AC. You will come to them in time. Why not buy a set *now* and note the improvement?

CHAMPION IGNITION COMPANY, Flint, Michigan, U. S. A.

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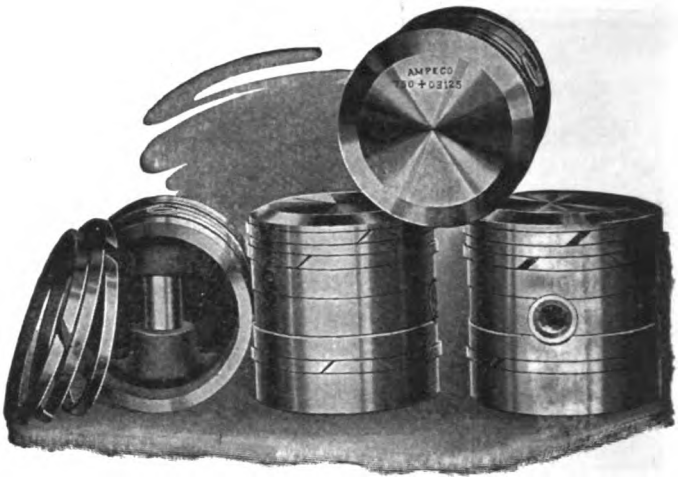
The technicalities of tire construction do not interest you. It isn't what goes in but what comes out of a tire that counts. Well, anywhere from 8,000 to 10,000 miles is a common Kelly-Springfield performance.



Kelly-Springfield Tire Co.
Executive Offices
Seventh Ave. at 57th St., New York.
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1900 Euclid Ave., Cleveland, O.

Fords Converted Into Trucks and Tractors Can Now Use

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For Every Ford Car In Service

Better running trucks and tractors that pay, smoother running passenger cars that skim along easily under every load, inevitably follow when you install "AMPECO" light weight, evenly balanced pistons in your Ford. Overcome main bearing troubles, give increased power and greater speed. Found always in the most efficient motors on Ford cars.

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CHECK MAPS DESIRED
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Every spare tire needs a protecting cover—one tailored to fit and look well—one that's easily put on and removed, always ready for use.

Invincible

Tire Covers

are made of the finest quality of waterproof fabrics. They are tailored to fit every make and size of tire, keep out the water which rots the fabric, and will add many miles to the life of the tire.

They can be supplied in any color desired, to match the finish of various cars. Every dealer in motor accessories should have our catalogue at hand. Your jobber can supply you with our goods.

The
Peters & Herron Dash Company
77 S. Gift Street, Columbus, Ohio



Service that makes Friends

Probably no business demands more action than the garage and auto repair business. Every day you are faced with a new line of customers requesting, demanding, beseeching "speed—more speed!" And you know that your success will be measured by the manner in which you meet this ever persistent cry.

Harvey RACINE

Boltless Steel Springs

When a spring breaks—if you haven't a Harvey in stock to fit the car, get the nearest Harvey Jobber on the wire. Tell him your needs. He'll not ask you when you want it. He knows the demands of your business and he will see that you get the springs you want by the first return express.

Speed In Delivery

Quality in materials, dependability in performance, accuracy in fit—these are the things which will win for you the loyalty and friendship of your customers—these are the things which combine to make Harvey Service predominant in the motor trade.

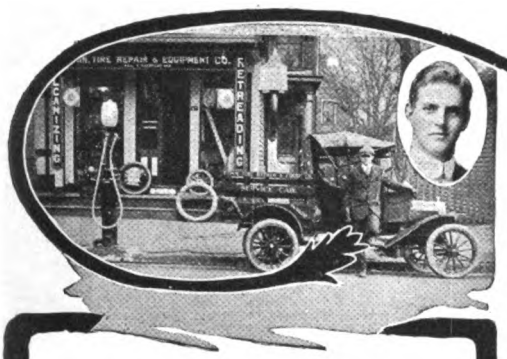
There's A Harvey Jobber Near You

Drop us a card and we will send you his name and our Spring Book giving complete weights, styles, measurements and prices of over 900 different kinds of springs.

Write today — you may need Harvey Help tomorrow.

Harvey Spring & Forging Co.
900 17th St., Racine, Wis.

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The Haywood Shop of Paul R. Fredericks, Wallingford, Conn.

$400 a Week

"Just a year in the business and now doing $400 to $450 a week at a good round profit" tells the story of this Haywood shop. Scores of men have found their independence in the Tire Repair business, have opened Haywood shops and are making big money. The coupon below or a post card with your name and address will tell you how to start.

More Men Wanted

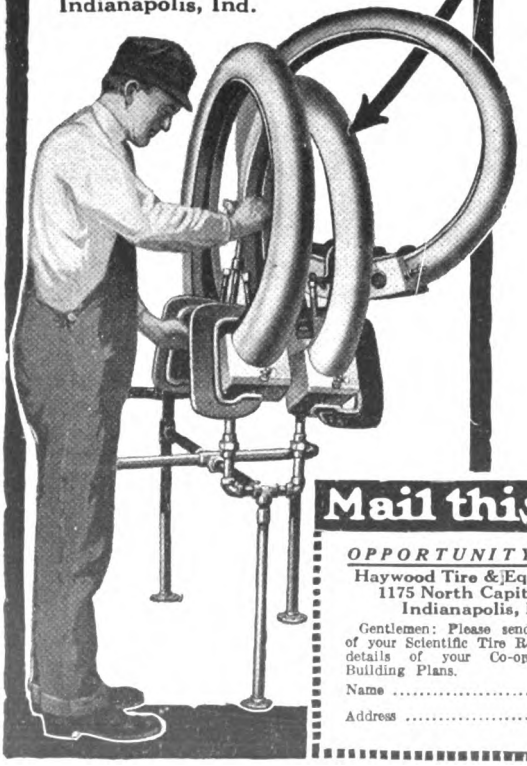
30,000,000 Tires to Repair

The demand for tire repairing is now so great that more Haywood stations must be established at once throughout the country. We want capable, energetic, ambitious men in charge of each—men who are dependable—competent. **You can have this opportunity. Make $3,000 a Year or Better:**

A Wonderful Opportunity

The coupon—your name and address, brings full particulars. How to start. How to tie up with the Haywood Service. We'll give inside facts and figures about costs and profits—explain in detail our Co-operative Business Building Plans. Write today without fail. Learn how you can start at once.

Haywood Tire & Equipment Co.
1175 N. Capitol Ave.
Indianapolis, Ind.



The Money Making Haywood Machine

Get the Facts

Mail this Today

OPPORTUNITY COUPON

Haywood Tire & Equipment Co.
1175 North Capitol Avenue
Indianapolis, Indiana

Gentlemen: Please send full particulars of your Scientific Tire Repair Service and details of your Co-operative Business Building Plans.

Name .....

Address .....



Air is Life!

Insufficiently inflated tires mean excessively inflated tire bills. Keeping your air pressure up means keeping your tire expense down.

Test your air pressure daily with a

Twitchell Air Gauge

and give your tires new air whenever they need it.

New Air Is Cheaper Than New Tires

At your dealer, or

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Price $1.25

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Located just off Times Square

The Hotel Woodstock

is within a handy walk of everything—terminals—subways—elevateds—surface lines—theatres and the automobile district, yet you can have quiet, refinement and service withal.

Single Room, with Bath . . $2.00 and $3.00 for one
Single Room, with Bath and Two Beds, $4.00 and $5.00 for two

European plan restaurant unexcelled for its cuisine

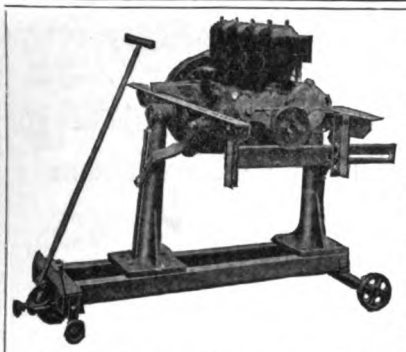
Service and accomodations unsurpassed for completeness and efficiency

Write for our Map of New York

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The Only Engine Stand THAT PROPERLY MOUNTS Every Type of Motor Suspension

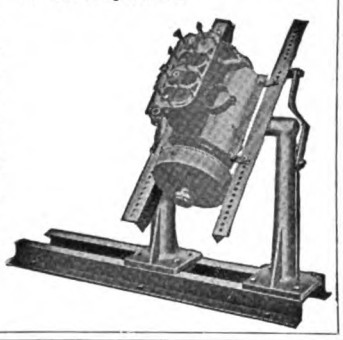
And supports it in *any* position, so that the workman may reach all parts with ease and safety.

The MANLEY "EVERY WAY" ENGINE STAND

It can be anchored securely to the floor, or moved about the shop easily on roller-bearing casters, as occasion demands.

It can be adjusted to every position in a circle, making it equally easy to work on valve mechanism, clean out carbon, grind valves, take up crankshaft, connecting rod, bearings, etc. In each position engine is rigidly locked by two side braces, leaving workman absolutely free and unobstructed. It supports the engine solidly, never gets shaky, and should last a lifetime without repairs. Prices (with complete equipment), Stationary, $43; Portable, $53.

For 4-point suspension, the brackets are bolted directly to cross arms, having 100 holes. For 3-point, adjustable cross bar shown in cut is provided.



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Hanover, Pa.

THE ONLY PLUG IN THE WORLD BUILT FROM THE BOTTOM UP



REVOLUTIONIZES IGNITION

This amazing Power Spark Plug is built like a dynamo with an independent inside steel shell. This means more power and increased mileage. La French will carbon less, and in fact is practically indestructible. No porcelain to break—the wonderful Nixite insulation process is used throughout. Sold in complete sets only.

Price $1.25 each plug. In Canada $1.50. See your dealer or write the factory.

DEALERS AND DISTRIBUTORS
Write or wire now for sales information.

LA FRENCH POWER SPARK PLUG COMPANY
18 First Ave., Columbus, Ohio

LA FRENCH
POWER SPARK PLUG

Keep in Touch With YOUR CUSTOMERS

by keeping them in touch with comfort in their winter driving. Steer Warms will "do the trick" for both you and your customers. No matter how cold the weather, or how long the drive.

STEER WARMS Will Keep The Hands Warm

and the fingers limber and the grip on the steering wheel strong and secure—making for safer driving as well as comfortable driving. No trouble to put on. No expense to use; heated by the electricity from the storage battery, or magneto, consuming less current than the headlights. Retail prices: For all gasoline cars, $7.50; in Canada, $11; special for Ford Cars, $5; in Canada, $7.25.

GUARANTEED FOR 5 YEARS

Steer Warms are made of the best materials and by the best workmanship. They are absolutely and unqualifiedly guaranteed to do all we claim for them; guaranteed against burn-out for five years. Money refunded if they fail in any way.

GET THE GENUINE

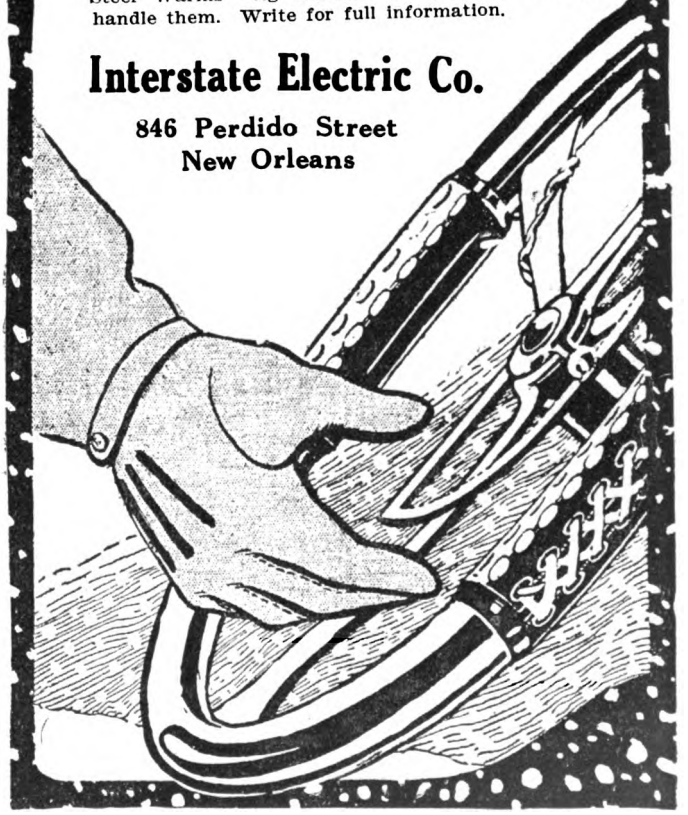
Steer Warms are the only hand-warmers in which the heating element is so arranged as to be fully protected, thereby assuring uniform and unbroken heat, just the right temperature to keep the hands warm and comfortable. They're not expensive. They're guaranteed. You take no risk with Steer Warms, as with inferior infringements. Get the genuine.

GOOD PROFIT TO DEALERS

Liberal discounts from retail prices give dealers good profits in handling Steer Warms and national advertising and dealers' aids which we furnish make Steer Warms "big sellers." It will pay YOU to handle them. Write for full information.

Interstate Electric Co.

846 Perdido Street
New Orleans



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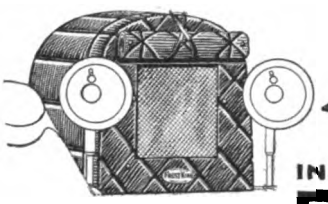
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WITH
BIT STOCK SHANKS



are samples of many "Morse" Tools that are very handy about a shop where each job varies from the last. They are stout tools accurately ground, and will stand up to a lot of hard work.

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New Bedford, Mass.



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FROST KING
Asbestos Insulated Radiator Cover

Save gasoline, protect your engine—your radiator. Engine and radiator covers made of the best insulating material known, genuine asbestos reenforced with heavy Kersey and waterproof imitation leather. Furnished for any car. Dealers be sure to have them on hand before colder weather comes. Prices $2.75, $3.25, $5.00 up. Manufactured exclusively by

CINCINNATI AUTO SPECIALTY CO., Dept. W107, Cincinnati, O.

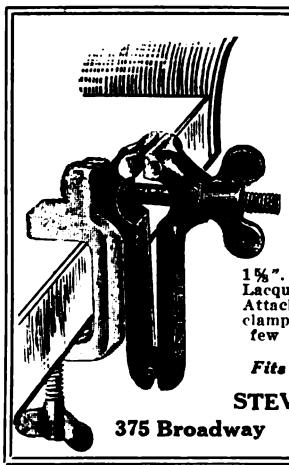


The Presto Heater
Is Better Than Ever

With Handle and Hook to Hold It

With the new hook that operates on a swivel base you can hang the PRESTO Heater practically anywhere beneath the hood. With the new handle, you can move or hold it easily though still hot. Improved throughout. Better than heating the whole garage, and cheaper.

METAL SPECIALTIES MFG. CO., Inc.
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Western Branch: 149 New Montgomery St., San Francisco, California.



Indispensable

A mechanic will find it useful every hour of the day. A motorist will be constantly learning new ways to make it serve him.

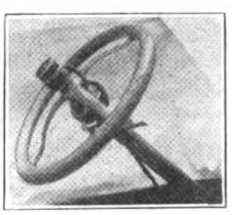
STEVENS HAND VISE

Is strongly made—drop forged. Four inches long over all. Jaws hardened, 1⅛" wide. Opened by a spring handle 1⅝". Wing nut gives jaws a powerful grip. Lacquered finish. Packed one tool in a box. Attachment is furnished by which vise can be clamped to bench. Attached and detached in a few seconds.

Fits Your Pocket

STEVENS & CO.
375 Broadway New York

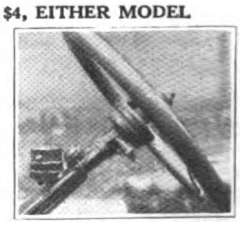
STEVENS NEW YORK



HANDY DUBOLITE and DIMMER COMBINED

Two bright, brilliant lights, even at low engine speed, using regular bulbs. Guaranteed absolutely reliable. Quick sales and a good profit for dealer.

PRICE $4, EITHER MODEL



Registered U. S. Patent Office.
Patented Aug. 14, 1917

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Canadian Distributors:
Walkerville Hardware Company
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BURD
High Compression PISTON RINGS
"The Accepted Standard"
BURD HIGH COMPRESSION RING CO.
ROCKFORD, ILLINOIS
Sales Offices in All Principal Cities.

Gives More Power Greater Speed

IMP CARBON CHASER

Better Ignition and Uniform Combustion

The New Fuel Element

SAVES 25% GASOLINE
ELIMINATES CARBON

One IMP Tablet in every FIVE Gallons of Gasoline **will** do the work. Retail price east of Rockies **75c.** can of **20** tablets. Exceptional discount to Jobbers **and** Dealers.

Convince yourself, Mr. Dealer—send for FREE TRIAL
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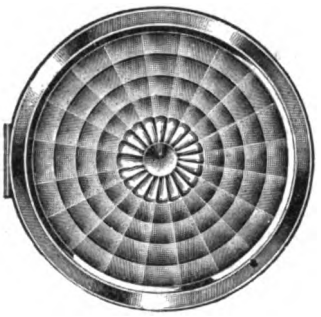
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"MORE-LITE"

The Perfect Auto Light

100% Efficiency

30% Cost



Eliminates the many dangers of night driving

Why Pay More for Less Light Than Less for "More - Lite"?

With "More-Lite" lenses your bright lights are within the laws of all states.

They are one-piece lenses. Made in either Crystal or Amber glass; in sizes to fit any car.

LIST PRICES

Diameter in Inches	Per Pair	Diameter in Inches	Per Pair
6" to 8½" inclusive	$1.50	9¾" to 10¼" inclusive	$2.00
8¾" to 9½" inclusive	1.75	10½" to 11¼" inclusive	2.25

DEALERS AND JOBBERS WRITE FOR SPECIAL DISCOUNT

Manufactured by

L. E. Smith Glass Company, Mount Pleasant, Pa.

STOP THAT WASTE!



Uncle Sam is calling for gasoline economy—you can do *your* bit by getting after the car owners you know and urge them to install Inland *gas-tight* piston rings. Our plan will show you how to GET THEM—it will boost your business in dull winter months. Don't wait—write us to-day. The Spiral cut makes Inlands absolutely gas-tight; strongest and most durable because equal width and thickness all around; and low-priced because one-piece.

INLAND MACHINE WORKS

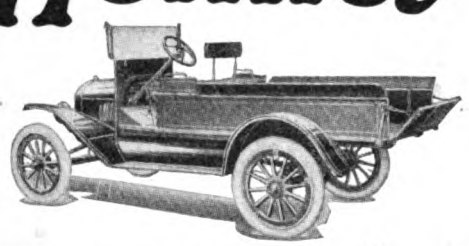
815 Mound St., St. Louis, Mo.



INLAND

1 PIECE PISTON RING

Henney



Commercial Bodies for Ford Cars

Their quality, beauty and lasting utility sells them. Built in all styles to fit regular Ford Model T chassis.

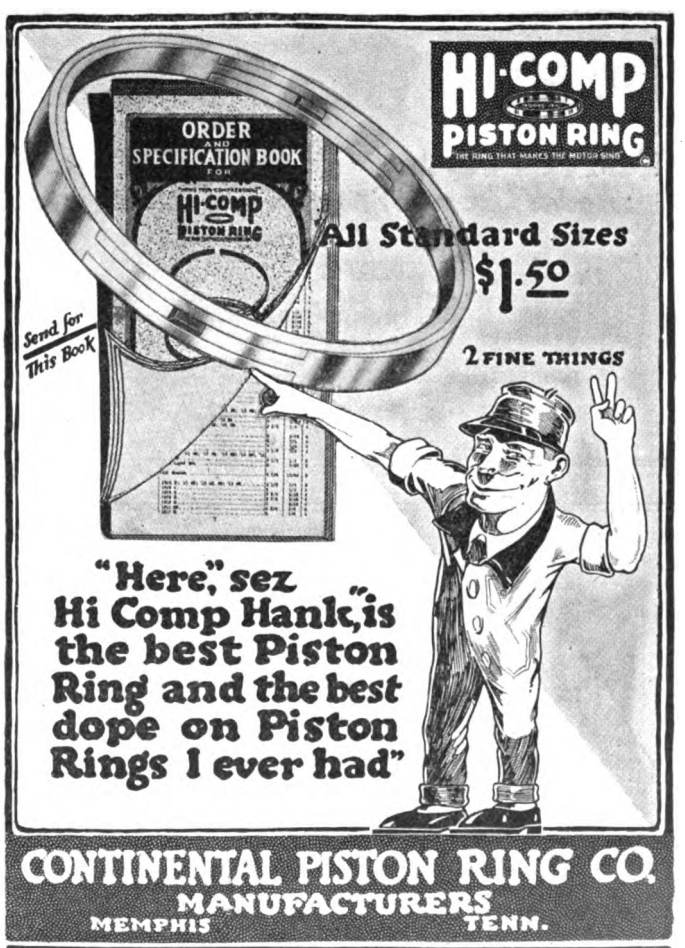
We also offer the trade a complete line of Henney Truck Bodies for Ford One-Ton Truck and all Ford Truck Units. Big demand—good profits.

Sold Direct to Dealers on Close Margin at prices based on quick cash sales.

Complete stocks carried at all our branches means prompt delivery and selling help. Our line includes Commercial Fenders needed on every Ford commercial car.

Catalog describing full line on request. Our agency proposition will interest you. Address Main Office or nearest branch.

Henney Buggy Branch of Moline Plow Co., MOLINE, ILL. Factory: Freeport, Ill.



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TENION RINGS

Edward A. Cassidy Co.
A Selling Corporation
Madison Ave. and 40th St., New York City

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Are Doubling Profits for Some Dealers
Write for Our Interesting Offer

These tires are sold without a guarantee. Write and ask us how we do it. They are positively *not* seconds, but first-class fresh casings.

	Non-Skid	Tubes		Non-Skid	Tubes
30x3	$7.55	$1.90	32x4	$14.75	$3.10
30x3½	9.85	2.15	33x4	15.75	3.10
32x3½	11.55	2.35	34x4	16.35	3.20

Prices On Other Sizes In Proportion

Send us your order today, accompanied by cashier's draft on Chicago or New York, or money order. Large and small orders given immediate attention. *Write today for territory.*

Prices will positively be advanced November 1st. Place your order now



This "Straight Side" Type is Made Also in Clincher Type

1469 Michigan Ave., Chicago

GEARLESS DETROIT CRANK-SHAFT Tire Pump
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960,000 PROSPECTS

WITH CARS BETWEEN $800 and $1300

Now ready for Briscoe, Dodge, Chandler, Hudson, Overland, Reo, Stearns, Saxon 1916, and Studebaker cars. On and off in a jiffy without tools. Not a rubber diaphragm device. Write for details. Dealers, ask for discounts.



Price $10

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The Original Double Arm SHOCK ABSORBER W & C For FORD CARS

Recommend W & C

to customers who merely ask for shock absorbers. W & C is what they mean. It insures the easiest riding Fords.

Ask your jobber's salesman or write us direct.

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TRADE MARK
IGNITION SYSTEMS
the last word in proven efficiency

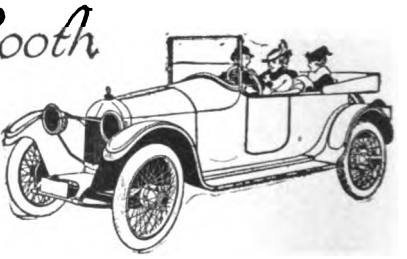
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Made for any car—any number of cylinders.
Moderate in price. Easy to install.
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In both the four-cylinder and the eight-cylinder models, Scripps-Booth combines the height of motor luxury with light weight, in a way never before achieved. The resulting comfort and economy have given Scripps-Booth a unique position with a highly desirable clientèle.



Four-cylinder Roadster.....$1250
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Detroit, Mich.

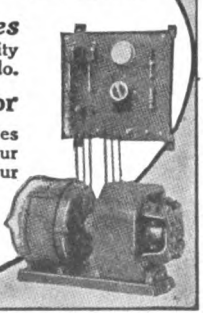
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Its scientific articles are complete and authoritative—its editorials of importance—its news accurate and valuable.
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Only $1.00 each.

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America's New Quality Truck

1½-Ton and 2½-Ton Models

Constructionally Superior in 24 Different Particulars
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The BEST wrench in the WORLD



"WESTCOTT"

"Westcott" is the original, adjustable "S" wrench—more convenient for motor work than any other wrench.
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Sizes 6 to 14 in. (open from ¾ to 2 in.) Price per doz., $8.00 to $21.
Get them in your catalog

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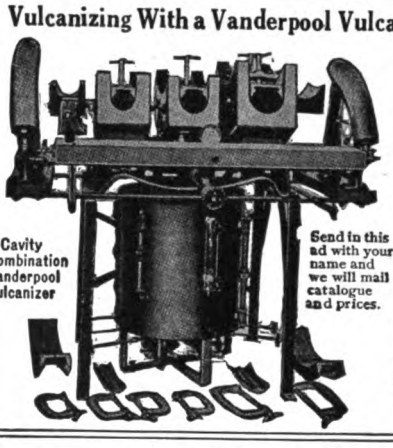


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Long Service
TIRES

Each Delion dealer gets *all* the Delion trade in a definitely-named territory. This holds good *permanently*. And he gets the profits he *should have* in tires. Investigate.

DELION TIRE & RUBBER CO., Inc.
Main Office: 1922 Broadway, New York
Chicago Office: 3449 Michigan Ave., Chicago

Vulcanizing With a Vanderpool Vulcanizer Brings Big Profits



3 Cavity Combination Vanderpool Vulcanizer

Send in this ad with your name and we will mail catalogue and prices.

Here is an exceptional opportunity for Garages as well as Vulcanizing Companies to secure a vulcanizer that will turn out high-grade work at a small cost. The fuel saved alone will pay for the machine in a short time—then you will "cash in" on your investment. This plant, the Vanderpool Vulcanizer, is meeting with enthusiastic approval of hundreds of satisfied users all over the country. Unsolicited testimonials from the various companies now using the "Vanderpool" testify to the dependability, efficiency and economy of this "Vulcanizing Wonder." One man writes that the first month's profits paid for the plant. No experience needed—we teach you how. It occupies very little floor space, and "once bought, you will never have to buy again."

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Make more money selling Gemco Bumpers for front and rear. Built on correct end-thrust principle. Diamond or channel bars—extra heavy, can't rust.

End Thrust Bumpers Ask your jobber or write direct.



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Nation-wide Service on Bearings

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"Clero Horns" is the other name for "Dealer Profit"

Every live dealer in this country realizes that the only successful business is a profitable business.

We want to aid in making your business more profitable—and *we can do it.*

Clero Horns are manufactured by a big organization with unexcelled facilities for putting highest quality into large production, and thereby *insuring* low list prices, liberal discounts—and consequent good profits. We want every dealer who handles accessories to write us at once. We will send our irresistible profit making proposition by return mail. Don't put it off until a later time, but write for our "AA" dealer proposition *at once.*

Most Liberal and Livable Discounts to the Trade

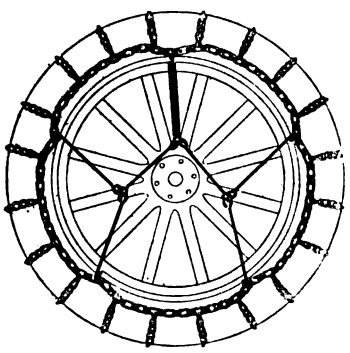
THE FITZGERALD MANUFACTURING CO.
Department C Torrington, Conn.

Jackson Rim Company
Jackson, Michigan

Demountable Rims

Plain Clincher and All Styles of Q. D. Demountables, Straight Side or Clincher

Controlling Perlman Demountable Rim Patents



The Merchant's Anti-Skid Chain Tightener at $1.00

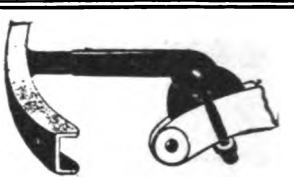
a pair offers a swell opportunity for profits to dealers. It keeps the chain from running too loose and pounding on the fender, yet allows it to creep around the wheel.

Simple, light, neat, compact, durable—easily carried and easily applied.

If your jobber can't supply you—write for our liberal proposition.

M. H. MERCHANT, 236 Emma Street
SYRACUSE, NEW YORK

SAGER BUMPERS



Sell Easily. They sell because of their low price, and because of their reputation—a reputation which is constantly growing on account of their uniformly good quality and efficient service.
Sager Bumpers provide the dealer and jobber with a full line of bumpers in all styles and to fit all cars.
If you do not know the Sager Line, look it up. It means big profit and satisfied customers.

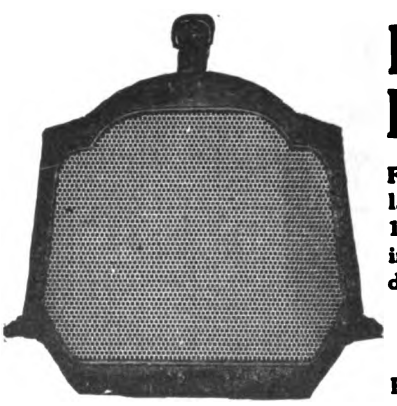
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It Smothers the Bump



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Fedders quality is largely the result of 18 years' specializing in radiator production.

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Built on the pipe-organ principle. Gives a musical signal effective for long or short distances. Amply warns but does not frighten.

Cannot clog; easy to put on; has no up-keep expenses; lasts as long as the car. A winner for dealers.

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The Plug with the ONE INCH Firing Surface



This much-to-be-desired feature distinguishes the BERGIE National Spark Plug from all others.



BERGIE Plugs cost no more than the other kind—$1 each. Guaranteed for 1 year.

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Manufacturers of Passenger Cars and Trucks, including the Famous Nash Quad.

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POUVAILSMITH CORPORATION
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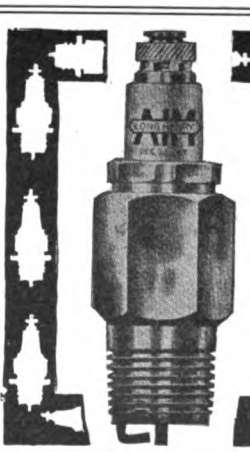
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1½ Ton Capacity
Has created the world's standard in motor truck value

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It has been our endeavor to create a commercial vehicle that would excel first of all in the quality of the material used, and, second, in the economy of its operation.

Our reputation for producing the most lasting truck is recognized by our many users.

We offer for your convenience the following sizes:

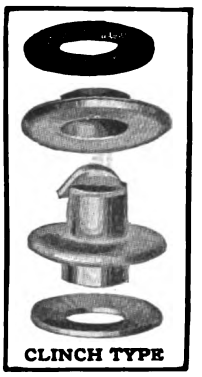
1½-ton 3½-ton
2-ton 5-ton
7-ton

Hurlburt Motor Truck Company
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The easiest operated—non-rusting, non-tearing fastener. *Write for samples.*


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Long Life Bushings In Spite of Neglect

Oil-less

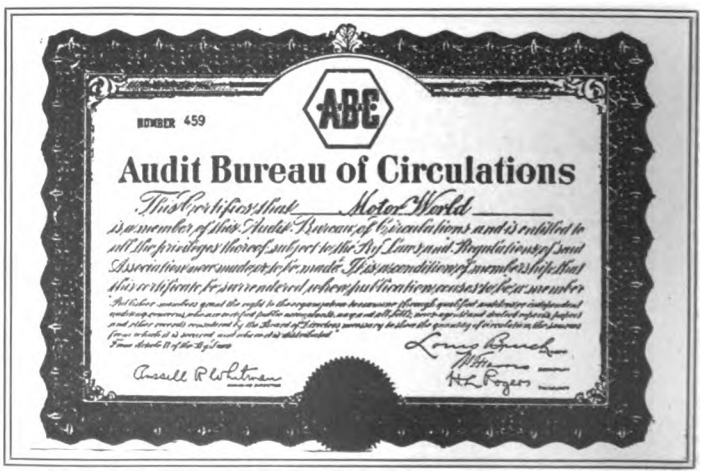
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last approximately six months longer than the average battery. They are about 15 per cent more powerful in proportion to size and cost.

This is why their sale is now increasing on an average of over 60% every four weeks—a record no other battery has ever approached.

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The Only Truck Attachment that Includes Unit, Cab and Body in one Job at one Price $385

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All-3 UNIT-CAB-BODY Truck Attachment



Saves you $75 to $125 on body equipment. Write for booklet. Get our dealers' proposition.

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BETHLEHEM MOTOR TRUCKS
"Dependable Delivery"

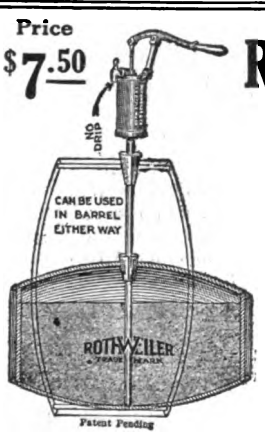
$1245 — 1¼ Ton Chassis
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Price $7.50



Rothweiler Pump

Empties a Barrel or Drum Completely

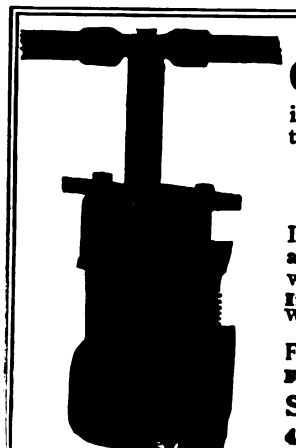
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Seattle, Wash.



THE STORM & O'HAIR
Cylinder Reboring Machine

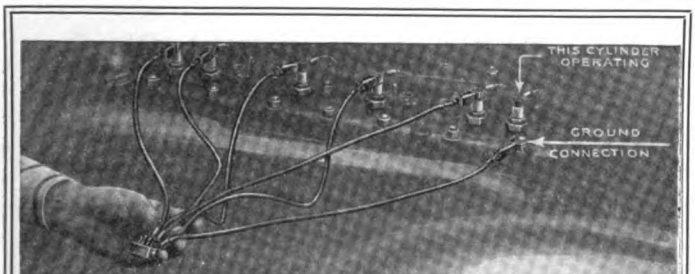
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It is simple, speedy and accurate and can be used by anyone familiar with tools.

Indispensable in any repair shop. We furnish oversize pistons for all makes of motors.

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Write for literature or order today. **Prices $2.00 to $9.50**

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The "Big Stick" That Brings Down Gasoline Expense

Up goes the price of gasoline! Maximum mileage is the big problem of the day! Solve it with the New Stromberg Carburetor.



The official world's records made by the New Stromberg in gasoline mileage prove that you need the New Stromberg on your car. Mail coupon for details of how the New Stromberg will reduce your gasoline bills.

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New STROMBERG Does it! CARBURETOR

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Electric Cranking and Lighting
For Ford Cars

PRICE $85.00 Complete, including Ammeter, Dash Light, Tail Light and Lock

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REES JACK
WORM GEAR DRIVE



$8.00

A worm-driven jack, with crank handle that folds to fit in tool box. The safest, most powerful, easiest handled lifting device ever made. No springs, pawls or ratchets. No slipping back, running out, dropping under the load. No crawling under the car.

Write for particulars

THE SERVICE CORPORATION
FRICK ANNEX PITTSBURGH, PENNA

OWEN MAGNETIC

WHAT IS YOUR UNDERSTANDING OF FLEXIBILITY?

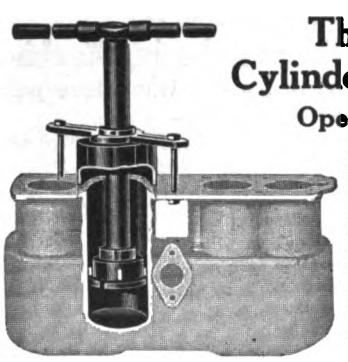
Flexibility means (according to the advertisements) the ability of a car to slip from low speed into high, or from high into low, with extreme smoothness and celerity.

Flexibility—approached in other cars—is actually attained in the Owen Magnetic.



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Operates on Any Car

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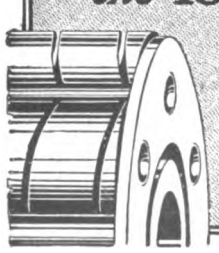
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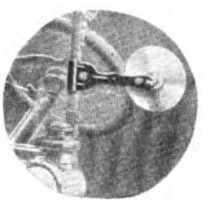
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show customers what they are paying for. That satisfies them and it protects your trade.

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Upholstered Stools

Made with a little larger top than our regular stools. Seat is 11 inches square with corners cut. It is upholstered in imitation leather, black or maroon, tufted with hair. Seat is made of three-ply ¼-inch veneer and will not warp or break. Folds very compact. A very handy, comfortable stool much in demand by automobile and camping parties.

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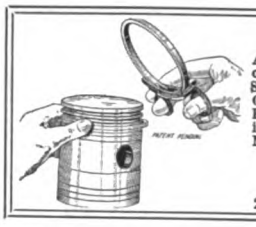
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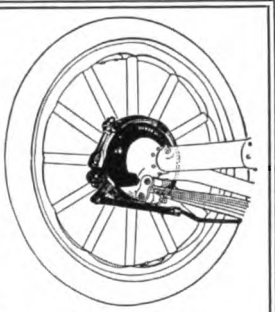
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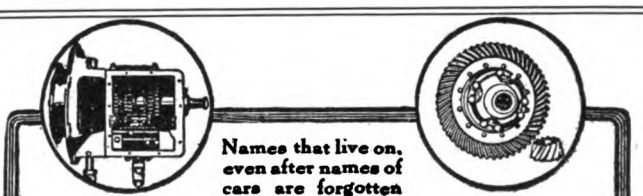
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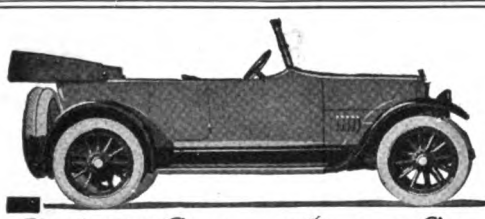
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$850 to $950

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Bulletin No. 35

Jos. C. Gorey & Co.
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AUTOMOBILE PARTS
ARE THE BEST

50% to 75% off Manufacturers' List Price

Our stock consists of motors, transmissions, axles, crankshafts, crank cases, cylinders, camshafts, transmission cases, etc. Below is a partial list of cars for which we can supply all parts.

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Cole, 4-50-1913; 6-1913 30-1912; 40-1914
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National 4, '10 to '13
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Paige, 25-36—Empire 25
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Stevens-Duryea
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Stearns, 30 to 60
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Matheson 4-6
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Pope Toledo—Winton 6
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Pope Hartford
Reo, 1908 to '13
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Alco
Glide-Warren
Locomobile—Knox
Interstate—Jackson
Abbott Detroit
Courier-Glide
Buick, 10-17-19-30
Moon 30-40-45 & C
Maxwell, all models to 13
Packard, 1905 to 1912
Pierce-Arrow, '07-'12
Hudson, 20, 33, 37, 6-54
Ohio-Regal
Bergdoll-Staver
Allen, '15 and '16
Atlas-Speedwell
Mitchell, 1908 to '14
Thomas, all models
Great Western—R. C. H.
Oldsmobile Special
Limited-Autocrat-Defender-42 and 43
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MAXWELL BROS.
3921-23 Olive Street, St. Louis, Mo.

To All Owners of
MAXWELL-BRISCOE
STODDARD-DAYTON
EVERITT

Maxwell 6-50
Maxwell 4-35
Flanders "Six"
Brush
Courier-Car
Columbia
Courier Clermont
Sampson "35" Motor Cars
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The Maxwell Company has transferred to the Standard Motor Parts Company the entire Service Department on all of the models above listed, and all orders for repair parts should be placed direct with the Standard Motor Parts Company, New Castle, Indiana.

Better Service will be given these owners than ever before, and many reductions in repair parts prices have been effected.

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Standard Motor Parts Co.
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FOR ALL MAKES OF CARS

AXLE SHAFTS, TRANSMISSION GEARS, BEVEL RING GEARS and PINIONS, SPRINGS, REAR AND FRONT AXLES, AND PARTS FOR SAME.

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BEAUTIFUL STREAMLINE TOURING AND ROADSTER MODELS—CAN BE MADE TO FIT FORD, CHEVROLET 490, HUDSON 20, R. C. H. and nearly all other light cars.

ROADSTER $30.00
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Get busy and order now. You will never get more for your money.

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Crown fenders, for Fords, per set of four..... 13.00

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Guaranteed Used Parts
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Reo 1910—Empire 20
Buick 10-17-19-25
Maxwell Mascot
Parry—Rambler
Cole—30-40
Stutz—Imperial
Oakland 1910 & 35
Regals 1909 to 1914
Cadillac 1909 to 1912
Mitchell 1907 to 1912
Marmon 1909
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KANSAS CITY, MISSOURI — WICHITA, KANSAS

Announces

TO YOU {MR. REPAIRMAN / MR. GARAGEMAN

Our catalog, handbook, and guide "The Auto Electrician" is completed and just off the press. It will be mailed to you upon request.

In publishing "The Auto Electrician," we have not merely listed our stock of supplies, we have incorporated in the two hundred and fifteen pages of this guide for "The Auto Electrician" wiring diagrams, and useful hints, for the maintenance and repair of: starting motors, and electric parts of gasoline motor cars.

Owing to the fact that we have a limited number of these catalogs on hand, we find it necessary to limit our offer to the States of **Kansas, Oklahoma, Missouri, Nebraska, Colorado** and **Iowa.**

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On All Auto Parts and Accessories of Standard Cars!!

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28 x 3	$2.75	36 x 4	$7.50
30 x 3	2.85	33 x 4½	8.00
30 x 3½	3.95	34 x 4½	8.00
32 x 3½	5.00	35 x 4½	8.00
34 x 3½	6.00	36 x 4½	8.00
31 x 4	5.00	37 x 4½	8.50
32 x 4	5.50	35 x 5	9.00
33 x 4	6.50	36 x 5	9.00
34 x 4	6.00	37 x 5	9.00
35 x 4	7.00	38 x 5½	12.50

10% extra for Non-Skid. C. O. D. orders shipped same day. 5% off when cash accompanies order. Goods shipped C. O. D. upon receipt of 20% of order.

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OUR PROPOSITION: Within the next thirty days we will appoint about thirty men or firms in both Eastern and Western territory, to represent us as exclusive factory dealers in the sale and distribution of "HUDSON Super-Mileage TIRES."

4,000-MILE WRITTEN GUARANTEE WITH EVERY TIRE

Adjustments made on mileage basis of 30 miles to 60 miles per day, depending on size of tire.

JOBBERS' LOWEST NET PRICES

Tires	Non-Skid	Tubes	Tires	Non-Skid	Tubes
28x3	$ 7.25	$1.80	34x4	$16.55	$3.20
30x3	7.60	1.90	36x4	17.65	3.35
30x3½	9.85	2.15	34x4½	20.75	4.00
32x3½	11.55	2.25	35x4½	22.75	4.10
31x4	14.35	2.95	36x4½	23.75	4.15
32x4	14.75	3.05	35x5	27.20	4.95
33x4	15.75	3.10	37x5	27.60	5.05

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5000 MILE SECONDS

at the following prices without a guarantee. However, if you want a GUARANTEE FOR 3,500 MILES, add 20 per cent on these prices.

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28x3	$7.00	$2.00	32x4	$14.00	$3.35	35x4½	$21.45	$4.20
30x3	7.00	2.00	33x4	14.50	3.50	36x4½	22.00	4.30
30x3½	8.75	2.30	34x4	15.00	3.65	37x4½	22.80	4.60
32x3½	10.50	2.45	35x4	15.85	3.75	35x5	23.10	4.65
34x3½	11.50	2.70	36x4	16.20	3.85	36x5	23.95	4.75
31x4	13.75	3.20	34x4½	20.35	4.15	37x5	24.20	4.95

Add 10% to the above prices for non-skid tires

Order today—$1 deposit required. Tires shipped by return express subject to examination. Specify whether Q. D., Clincher or Straight Side Rim.

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	Tires	Tubes	Tires	Tubes
30x3	$14.10	$3.05	$ 7.75	$1.68
30x3½	18.25	3.75	10.04	2.06
32x3½	21.40	3.85	11.77	2.12
31x4	28.00	4.75	15.40	2.61
32x4	28.60	4.85	15.73	2.67
33x4	29.85	5.00	16.41	2.75
34x4	30.65	5.15	16.86	2.83
35x4½	43.10	6.45	23.60	3.55

These tires are built to give entire satisfaction. We give you a 3500 mile List Price Adjustment Guarantee.

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30x3½	10.75	32x3½	11.75	34x4	17.50
31x3½	10.75	32x4	14.75	35x4½	23.75
33x4	15.25			37x4½	26.00
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World's Largest Cylinder Repairing Company.
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33x4	14.50	36x4	17.50

Add 10 per cent extra for non-skids.

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32x3½	4.50	34x4½	7.50
31x4	5.00	35x4½	7.50
32x4	5.50	36x4½	7.00
34x3½	6.00	37x4½	8.00
33x4	6.00	35x5	8.00
34x4	6.00	36x5	8.00
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GUARANTEED 3500 MILES

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32x3½	14.98	35x4½	31.17

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Guaranteed For the Life of the Motor

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Welding and Expert Machine Work.

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U. S.

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38,453	Garages	50.00 or 2.50 per M.
36,431	Repairs	50.00 or 2.50 per M.
45,298	Supplies	60.00 or 2.50 per M.

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11 x 5 Seneca Falls, with chuck, complete.
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1	1	Westg.	AR	New	1750
1	1½	Kimble	Var.Sp.	Used	100-2000
1	2	Wagner	BA	Used	1800
1	3	Century	REP	New	1800
1	3	Westg.	AR	Used	1740
1	5	Wagner	BA	Used	1750

MOTORS—2-PHASE, 60-CYCLE, 220-440 VOLTS

1	1	Westg.	CSA	New	1800
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1	1	G.E.	K	Used	600-1800
2	2	Westg.	CSA	New	1800
1	2	Westg.	CS	New	900
4	3	Westg.	CS	New	1800
1	3	Westg.	CS	New	900
6	3	Allis-Ch.	AN	New	1800
4	5	Westg.	CS	New	1200
2	5	Howell	SC	New	1200
2	7½	Westg.	CS	New	1800
3	7½	W.E.	KT	New	1200
5	7½	Westg.	CS	New	1800
2	10	Howell	SC	New	1200
1	10	Allis-Ch.	AN	New	720

No.	H.P.	Make	Type		R.p.m.
1	15	Allis-Ch.	AN	New	600
1	15	G.E.	K	Used	1800
2	15	Allis-Ch.	ANY	New	900
1	20	Westg.	CS	New	1200
2	20	W.E.	KT	New	900
3	20	W.E.	KT	New	1200

MOTORS—DIRECT CURRENT—220-VOLT

1	¾	C.W.	SH	Used	720
1	2	G.E., G.E. grinder		Used	1650
1	2	Richmond	SH	Used	1000
1	3½	G.E.	CE	Used	800
1	5	G.E.	SH	Used	1650
1	7½	Richmond	RE	Used	1500
1	7½	Eddy	SH	Used	1000
1	10	Westg.	M	Used	1250
1	15	C.W.	CM	Used	900
1	15	C.W.	SH	Used	725
1	20	Ft. Wayne	B	Used	820
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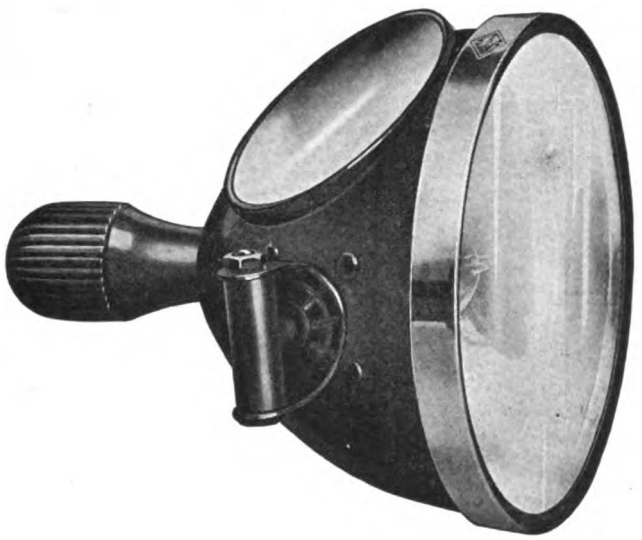
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You can describe your manufacturing equipment through an advertisement inserted in MOTOR WORLD'S Contract Work Section.

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Motor World Contract Work Department
239 West 39th Street NEW YORK

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GIANT SEARCHLIGHT

is a strong, handsome light that can be depended upon to give *more light* after months' exposure to the elements as well as when new.

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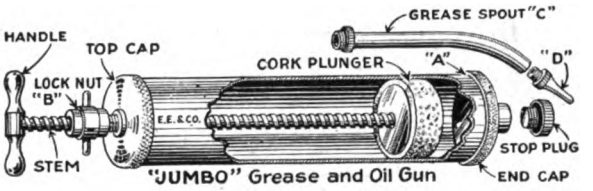
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Combination
Grease and Oil Gun



"JUMBO" Grease and Oil Gun

The last word in Grease Gun construction! Every car owner should have a **Jumbo Grease Gun!** The best value on the market today for the money. Notice the Cork Plunger—the quick change feature from grease to oil—the combination Grease and Oil Spout!

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2. You obtain a car produced in a magnificently equipped plant.
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4. You obtain a car produced by an organization materially strengthened by additional financial resources.
5. You obtain a car from a distributor or dealer who will have the support of this organization.

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President and General Manager
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IMMEDIATE SERVICE ON ANY SIZE RING

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"To Have and To Hold Power." It will tell you all about the Genuine McQuay-Norris LEAK-PROOF Piston Ring. It will save you and your customers a good deal of money, time and trouble. Write Dept. K.

Manufactured by

McQuay-Norris Manufacturing Co., St. Louis, U.S.A.

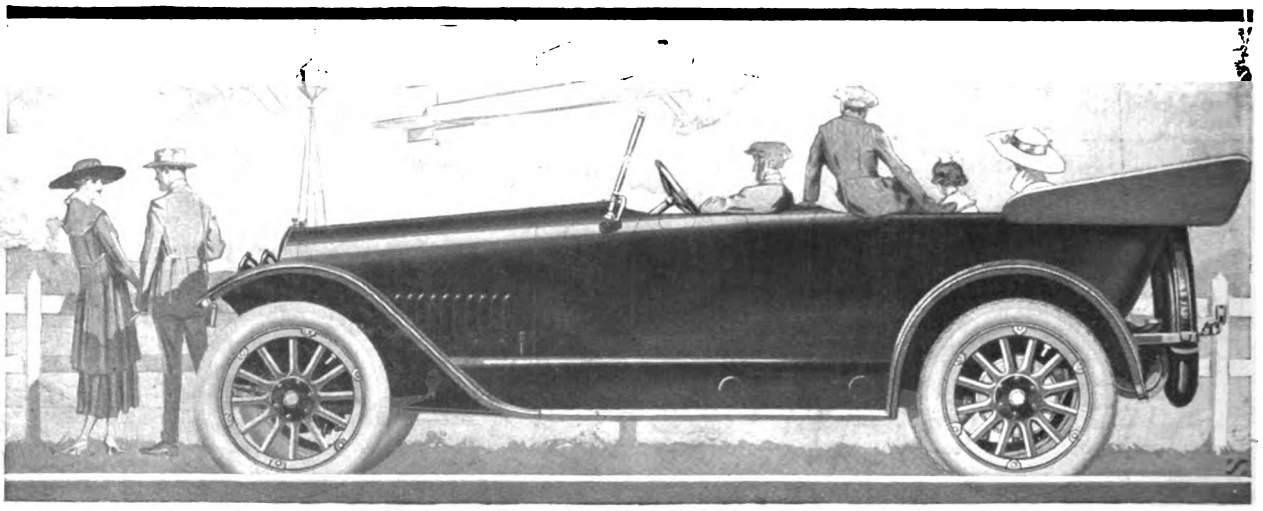
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What $1250 Buys

Even Nowadays—In a Mitchell Six

You have heard much about advancing costs. But note Mitchell Junior—our 40-horsepower Six—which still sells at $1250.

It has a 120-inch wheelbase. It has a motor almost as large as our big Six. It has dozens of extra features which most cars omit.

Above all, it is built to the standard of 100 per cent over-strength. That is twice the usual margin of safety. Yet it undersells all other cars of its size and power and class.

How We Do It

How do we give this double strength at the Mitchell price? It has made the Mitchell a lifetime car. It has reduced repair costs 75 per cent. Two of these Mitchells that we know of have already run over 200,000 miles each.

How do we give you 31 extra features? Each of them is costly.

How can we afford so much beauty and luxury? In the past year alone we have added 25 per cent to the luxury cost of the Mitchells.

The reason lies in our factory. This model plant was built and equipped for expert efficiency. Every detail was designed to produce this one type economically.

These factory methods have cut our labor cost in two. Now our new body plant builds all Mitchell bodies in the same efficient way. The total saving runs into millions.

That saving pays for this over-strength, these extra features and this added beauty. And it leaves our prices below all rivals still.

Note to Dealers: The Mitchell line offers a matchless opportunity in localities where we are not represented. The full line includes 19 new-day body styles. All designed and built in the Mitchell shops. The two sizes and two prices give the Mitchell an enormous field. We invite correspondence.

MITCHELL MOTORS COMPANY, Inc., Racine, Wis., U. S. A.

$1525

Mitchell—a roomy 7-passenger Six with 127-inch wheelbase and a highly developed 48-horsepower motor.

Three-Passenger Roadster, $1490
Club Roadster, $1560
Sedan, $2275—Cabriolet $1960
Coupe, $2135—Club Sedan, $2185
Also Town Car and Limousine.

TWO SIZES

Mitchell

Sixes

$1250

Mitchell Junior—a 2 or 5 passenger Six on similar lines, with 120-inch wheelbase and a 40-horsepower motor. ¼-inch smaller bore.

Club Roadster, $1280
Sedan, $1950—Coupe, $1850
All Prices f. o. b. Racine.

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WHAT ABOUT MOTOR TRUCKS—See Page 6

MOTOR WORLD

for

DEALERS, JOBBERS AND GARAGEMEN

Volume LIII
No. 5

New York, October 31, 1917

Ten cents a copy
Two dollars a year



The Most Beautiful Car in its Class

But that isn't all. It has power, endurance and abundant speed. It has a 114 inch wheel base, those easy riding, shock-absorbing cantilever rear springs, full floating rear axle, and vacuum gasoline system. It has a smooth-running, high-speed engine that averages 18 miles on a gallon of gasoline under normal conditions.

As is usual for such high class cars, it has CHAMPION SPARK PLUGS as regular factory equipment.

Champion
Toledo

Regular
7/8-18 Price $1.00

Dependable
Spark Plugs

Champion Spark Plug Co., Toledo, Ohio.

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178 New Jobbers in Six Weeks

Is the Latest Record for

UTILITY Protected Foot Rail HEATER

Jobbers stock and catalog what they know they can sell—when they know they can sell it.

178 new jobbers have just now gone on our books—in addition to the long list who realized the value of UTILITY Protected Heaters a year ago, and stocked in time to clean up on 1916 profits.

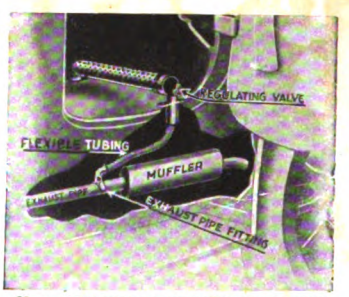


Dealers—Your jobbers have foreseen the demand for UTILITY Protected Heaters. They know their value, their success in sales and service last year. They have put them in stock for you. Their O. K. is unconditionally and almost unanimously given to UTILITY Protected Heaters.

Order yours from your jobber today.

JOBBERS—Write for our interesting offer.

Ask for combination counter-display wall-hanger.



How UTILITY PROTECTED HEATER Is Attached to the Exhaust

Price $15

UTILITY Jr. Protected Heater for Fords $7.50
UTILITY Front Seat Heater, for Maxwells, Chevrolets, Fords and Front Seat Installations in all other cars $10

Prices west of Rockies:
UTILITY Protected Heater.. $16.00
UTILITY Front Seat Heater. 10.75
UTILITY Jr. Heater..... 8.00

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THE HILL PUMP VALVE CO.

Archer Ave. & Canal Street, . . Chicago
Eastern Sales Office: 149 Church St., New York
Manufacturers of Famous UTILITY Auto Specialties

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Premier

The Aluminum Six with Magnetic Gear Shift

All trade authorities agree that there will be a greater demand for closed cars this fall and winter than ever before.

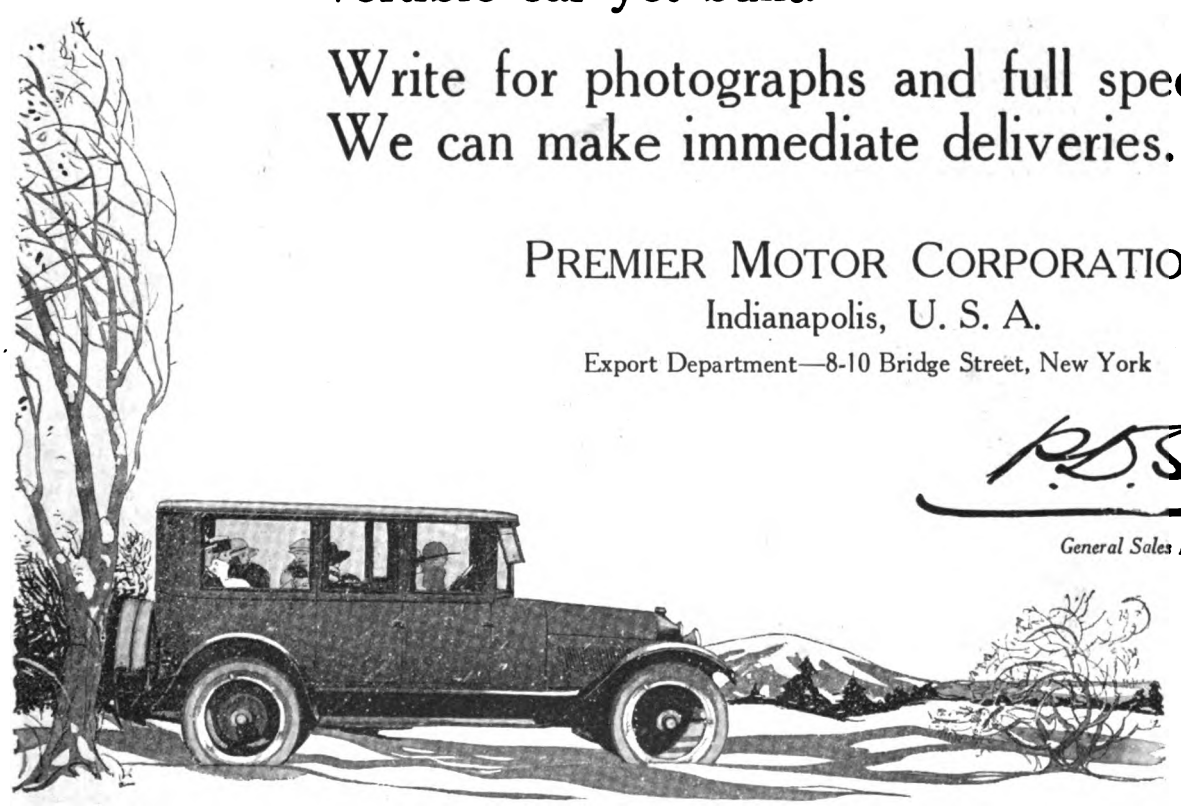
The Premier Touring-Limousine-Sedan can in a few moments be converted from a seven-passenger touring car into a sedan and from a sedan into a limousine. It has four doors—auxiliary seats that face forward—and is, we believe, freer from rattles than any other convertible car yet built.

Write for photographs and full specifications. We can make immediate deliveries.

PREMIER MOTOR CORPORATION
Indianapolis, U. S. A.
Export Department—8-10 Bridge Street, New York

P. S. Smith

General Sales Manager



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Of Special Importance to All Bicycle Dealers

Announcing Next Season's Line of Fisk Tires
The Most Complete on the Market

FOLLOWING out the Fisk policy of giving dealers and users exactly the type of tire best fitted to the use to which it is put, all of this year's most popular tires will be retained — the Motorcycle type, the Non-Skid Cord, Premier Tough Tread, Victor Thorn-Proof and Victor. No other tires have given such all-round satisfaction as these five — no other tires have represented more dollar-for-dollar value at the price.

FISK
Visible Value
BICYCLE TIRES

To this strong, quick selling line has been added an important number, the "66 Extra Heavy Khaki Top"—a handsome tire — with rich khaki-colored Fisk non-skid tread. This is as fine a product as ever came out of the Fisk factory and its timely khaki color will make it a prime favorite with the boy who is interested in military details—and that means all boys. We believe this tire will become at once widely popular.

Every Manufacturer of Equipped Bicycles Used Fisk Tires as Regular Equipment This Year

This has been a Fisk year. More Fisk Bicycle Tires have been used than ever before. Dealers have sold more. Every manufacturer of equipped bicycles used Fisk Tires as regular equipment this year — establishing for you an enormous market for re-sales.

Fisk quality is known to hundreds of thousands of bicycle owners. They have proved the value by constant use and they will be Fisk purchasers as long as they ride their bicycles.

For the dealer it has been a record-breaking year—the foundation for even higher sales records next season. Bicycle makers are planning now for the manufacture next year of an immense number of bicycles. This means a big tire year. Fisk Bicycle Tires lead the market. Lay your plans now to get *your* share of this business.



Write us NOW and get complete information. Orders will be delivered direct to you from one of our 130 Fisk Branches throughout the country.



THE FISK RUBBER COMPANY of N.Y.
Chicopee Falls, Mass.



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MOTOR WORLD
for
DEALERS, JOBBERS AND GARAGEMEN

PUBLISHED EVERY WEDNESDAY BY

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Its Record is Written in Accurate Miles

As true as it is scientifically and mechanically possible to make an instrument register and as sturdy and durable as faultless material and competent workmanship can make it, the

CORBIN-BROWN SPEEDOMETER

is the speedometer most suitably adapted to the requirements of rigorous, year-around service.

Because it is constructed upon the fundamental principle of centrifugal force it is absolutely unaffected by outside influences, such as heat, cold, altitude and electricity, and as a consequence its record remains accurate at all times and under all conditions.

Its hand is steady, its dial clear and easily read, in appearance it is neat, businesslike and compact. Investigate this instrument.

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NEW BRITAIN, CONN.

BRANCHES: New York Chicago Philadelphia
Makers of Corbin Duplex Coaster Brakes for Bicycles

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BOYCE MOTO METER

The Boyce Moto-Meter is daily protecting over a million Gasoline Motors.

They are used on thousands of Automobiles—Trucks—Tractors—Aeroplanes—Stationary Engines and Marine Motors.

They indicate under all conditions the exact heat of the motor, which unfailingly compels intelligent operation by both novice and expert.

Boyce Moto-Meters are endorsed by the entire motor industry. Over sixty automobile manufacturers are using them as standard equipment.

Without question the Boyce Moto-Meter is today the aristocrat of all accessories. The most wanted—the most widely sold.

SALES MANAGER
The Moto-Meter Company



The MOTO-METER CO., Inc.
Long Island City N. Y.

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MOTOR WORLD
for
DEALERS, JOBBERS AND GARAGEMEN

Vol. LIII | New York, U. S. A., Wednesday, October 31, 1917 | No. 5

Get 'Em!



AN EXPLANATION: *Owing to a labor dispute in the printshop where Motor World is printed, there has been some delay in printing Motor World this week.*

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The Truck Business

Is at Your Door! *Go After It!*

THIS TRUCK ISSUE of Motor World will give you a comprehensive idea of the truck situation. After you have digested it you will be better equipped to strike out into this new field and make a success. *Study this issue.*

1—It tells the specifications of all the different trucks made.
2—It tells who the makers are and where they are.
3—It tells what is happening in truck engineering.
4—It tells wherein truck selling differs from car selling.
5—It tells what you must do to become a truck dealer and SELL TRUCKS.

EVER since the war started we have heard a lot about trucks. What does it mean? It means that changing conditions have almost overnight pushed the truck industry years ahead. It has suddenly *jumped through ten years or more of development.*

It means that the business world has awakened to the need for motorizing itself. *It is ready to buy trucks.*

It means that the truck industry, prospective buyers and the trade generally are waiting for the appearance of a great army of truck dealers. This army is going to be created immediately. *It is partly created already.*

There is a big opportunity for you and every other car dealer to swing into line while the swinging is good, grab off a good agency, plug hard after business and get the jump on the whole field. *But you must act quickly.*

Also consider this point: Car sales have fallen off. There is no use kidding ourselves. Car sales are off and no one really knows when they will come back. Furthermore, the war may affect business in many other ways.

It does not seem as though it would affect the truck business *except to stimulate it,* and here is a fine chance for every car dealer to make up with trucks for his lost car business.

There is no cloud without its silver lining. The war has hurt car sales, but while doing so has created the possibilities for an enormous truck trade. *If you can't get business out of cars you can get it out of trucks.*

But remember this: No one is going about through the trade handing truck profits to people on silver platters. Each man must work for what he gets. This means that even though the opportunity is great the harvest will be reaped only by those who jump in with both feet and work hard.

Winter is at hand. It affects the sale of cars, but should not affect the sale of trucks.

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Becoming a Truck Dealer

WHEN you set out to become a truck dealer there are certain things you want to know. You are entering a new field. The conditions are different. The problems are different. The methods are different. The people are different. In order that you may be successful you must know certain things. Many of them have already suggested themselves to you.

So far as possible, MOTOR WORLD *has anticipated these questions. It has found what the prospective truck dealer wants to know, and it has then gone out into the field, investigated truck conditions, interviewed successful truck dealers, found how trucks have been sold, may be sold, and ought to be sold, and compressed all this data into the pages that follow.*

If you have questions in your mind, read these pages, for you probably will find here exactly what you want to know. You should read these articles, investigate the truck situation, and get ready for the big truck business that is on the way.—EDITOR.

HOW TRUCKS WILL BE DISTRIBUTED

THE distribution of cars has been worked out to a more or less standard basis. Practically every dealer, no matter how small, has a demonstrator.

But in the case of trucks it will not always be possible for the dealer to have a demonstrator, for two reasons:

1—He may be so small and the truck so costly he cannot afford it.

2—One truck may be so inadequate a representation of the line as not to be worth while.

How then is the truck distributer in the big city to get representation in the little country towns where there may be a few sales a year? This town must be covered even if it is worth but one sale a year.

Investigation of present distributing arrangements where they have been worked out and a study of conditions lead to this assumption:

The distributer will be the key in the plan. He will maintain an A-1 establishment with parts, demonstrators and a sales force.

Whenever the dealer's size and territory justify it and wherever the size of the truck justifies it, the dealer will have a demonstrating truck.

Where there is no demonstrator the dealer will act as a sort of tipster. He will work with catalogs, blueprints and specifications and use trucks already in service as his demonstrators. This latter is anyway one of the best means of demonstrating anywhere. In case the dealer can't close the deal with his facilities he will summon the distributer who will send out a salesman. This salesman may close the deal on the spot or may find it necessary to take the prospect to the distributer's place of business. Or he may take a demonstrating truck to the prospect.

In case the dealer requires too much service of this kind from the distributer he will be entitled to a smaller commission than the dealer who can operate in a regular dealer way.

The dealer's status as a dealer will depend a great deal on the size of the truck. With big, costly 5-tonners there will be few demonstrators. As the size becomes smaller the possibilities of the demonstrator become greater. And as the demonstrators become fewer the efficiency of the catalog-and-blueprint sales machinery must be made greater.

There are two extremes:

1—The dealer will handle trucks on a real dealer basis and get a full dealer's commission.

2—The dealer will be merely a tipster, most of the work will be done by the distributer, and the dealer will get only a small commission.

Where the chassis styles are not of great variety and are not much more costly than the average touring car the dealer can be a full-fledged dealer in almost any size of town, as is the case in car dealers of to-day, and as the chassis drifts away from this status in styles and cost the dealer will have to rely more upon the distributer.

In any event, handling trucks can be easily worked out on these lines with profit to all concerned. Even the dealer who is in a town of 1000 people and is a tipster for a 5-ton truck distributer will be making money because he obviously will have other business interests and the truck will be added profit.

HERE IS AN ENTIRELY NEW THOUGHT ON THE TRUCK DEALER QUESTION

THE man who sells wagons also sells farm implements, doesn't he?

Therefore, here is a new thought, which is that there is going to be developed a new type of dealer who will be what might be called a "gasoline implement dealer."

He would sell motor trucks, farm tractors, gasoline engines and all the allied products of a useful nature that are hooked up with the gas motor business.

Instead of trucks being handled by car dealers, instead of tractors being handled by car dealers or by implement dealers this new type of dealer would handle gasoline vehicles and gasoline machinery.

At present there is no such dealer that Motor World knows of, and the thought is merely presented as that of a prominent truck and car dealer in a large western city.

There seems no reason why such a combination of products would not be highly profitable, just as combinations of farm implements have proven profitable for the present implement dealers. But it doubtless will be some time before such a new type becomes numerous.

Meanwhile, don't let this suggestion stand in the way of your taking on trucks and tractors.

Perhaps you can use this thought and develop such a business as an extra department of the car business you are now running. It's worth trying anyway.

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Selling Motor Trucks Is Different

A TRUCK is as different from a passenger car as a lathe is from a suit of clothes. Certainly a suit is a necessity, and so is a car. But coupled with the utility of the garments are considerations of style and comfort.

The function of the lathe is entirely one of utility. The purchaser of the machine is not interested in its looks, but simply in obtaining a machine which will produce a maximum of work at a minimum of cost, and the question of comfort in its operation is only of importance in so far as it affects the return on the investment.

In a sense it is regrettable that a truck has wheels and is propelled by gasoline because it makes it difficult to realize that its function is in no way similar to that of the car. The truck is not simply an enlarged passenger car, but is a distinct article built primarily to save the purchaser money in transportation of goods.

Therefore it should be plain that selling a commercial vehicle is vastly different from selling a car.

Dollars and Cents

Selling a truck is entirely a dollars-and-cents proposition. Appearance scarcely matters, but usually it is a question of submitting facts and figures that will convince the prospect that he can save money by buying a truck or, more particularly, the truck which is in question.

The prospect is vitally concerned about how much his delivery or hauling is going to cost him per mile, or per load or per package. The question of specifications, appearance and design, easy-riding qualities, etc., is secondary.

To quote a prominent sales manager regarding the difference between selling trucks and passenger cars:

> "Instead of dealing with men personally and selling on style, elegance and smooth riding they (the dealers) are now dealing with business men as business men. The same man who might one day spend from $2,000 to $6,000 for a pleasure car will close up tight as a clam the following day when asked to spend $1 of his merchandising profit for anything connected with his business unless he is educated to its use or its need."

Must Learn First

Simply because the dealer has made a success of selling cars is no reason why he should assume that he can sell trucks; at least, without making up his mind to learn all he can about the truck business. He should not take it for granted that his car experience is all he requires. He should start in from the bottom and learn the business from beginning to end the same as if he were changing over to dry goods or millinery.

Dealers must study the merchandising of trucks. The sales manager of one of the largest truck manufacturing companies states that in his experience the average dealer says he knows, but as a matter of fact he does not know, and he emphasizes this by stating *that not a single one of his dealers is perfectly satisfactory.* Not one measures up to the required standard.

Read This Story, Men

This situation is not imaginary but very real, and an exaggerated case of it is shown by the following story: A dealer in a town of about 40,000 had the agency for one of the ten most popular passenger cars and one of the five most popular trucks. He had made quite a success of the passenger car not because of any particular ability, but simply because the car was in demand and people came to buy it. The truck agency was a recent acquisition.

One day a man to whom he had sold a passenger car said that he heard the dealer was handling a truck; he had come for information. The first question the prospect asked was, "What truck are you handling?" This was necessary because there was no sign on the building to show. The dealer scratched his head a moment, then turned to one of his workmen and said, "Say, Bill, what is the name of that truck we have the agency for?"

When a dealer takes on a line of trucks he should go to the factory and get acquainted—in fact, it would be a good idea to visit the factory before signing up for the line—because to look over the factory and talk with the men at the head of it will quickly show whether the product is one which the dealer will profit by handling.

Having started at this point, he should learn all he can from various factory executives regarding selling trucks. He should not take the attitude that he knows it all, nor should he assume that he is likely to fall from grace in the eyes of the factory men if he displays his ignorance. If he has ability and knows it, he should have no hesitation in frankly stating that he is there to learn and wants to learn all he can.

There is an added advantage in visiting the factory, and that is the dealer meets face to face the heads of the various departments and gets a true picture of the factory organization. It is necessary to actually meet the men in charge in order to intelligently and satisfactorily carry on correspondence with them. Having met them, he understands better their peculiarities and the difficulties under which they are working, and this goes a long way toward making the path smooth. On the other hand, the factory men, having met the dealer, will understand better how to handle his troubles.

Get Sold on the Trucks

There is a deeper reason, however, for visiting the factory, and that is he becomes sold on the trucks—unreservedly sold. If the dealer is not fully convinced that the truck he is going to represent is

WHAT THE TRUCK MANUFACTURER SHOULD DO TO HELP DEALERS SELL TRUCKS

TRUCK manufacturers will advertise, of course. That point is not to be considered in this story.

The point to be considered is dealer co-operation. Efficient planning at the factory can reap a big harvest of profits in the field. The factory should:

1—Issue sensible and effective literature. It should have literature covering different trades. It should not be necessary for the dealer to hand a grocery booklet to a druggist and say: "That's the best I have." There should be a druggist booklet if there is a druggist prospect field.

2—Circularize efficiently. When the dealer turns in the name of a contractor in the sand business the factory should be able to mail data pertaining to that work. The factory should gather this data and keep a big stock of such ammunition handy. One dealer in the Southwest asked for information on a certain line of business and was referred to an owner in a town miles away. The factory should have secured this information long before and had it handy when the dealer asked for it.

3—Issue a sales portfolio. This might be a loose-leaf leather-covered book in which the dealer could put all sorts of literature from the factory. It could hold pictures, blue prints, specifications, catalog leaves, testimonial letters, data forms and all kinds of sales material. Then when the dealer wished to visit a grocer he could put all his grocer material in the front of the book and have handy every printed argument bearing on that particular case. These leaves could be rearranged for visiting any class of prospect. This would be much better than having a scattered collection of data. Furthermore, the factory should provide a highly effective collection of material for this folder and constantly send out new material for insertion in the book. A book of this kind would reach its highest value in the case of big heavy trucks where demonstrating is at a minimum.

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all that is claimed for it, he is wasting time. Unless he believes everything he is taught to say about it, he cannot expect to make headway. Obviously if the factory cannot convince him, there is very small chance for his convincing his customers.

It will pay to have at least one salesman concentrate all his efforts on truck work. He should be a truck salesman in education and experience, a truck specialist, a man who has nothing to do with passenger cars.

In a larger organization, where there are several salesmen, there should be a truck sales manager; this work should not be delegated to the passenger sales manager, because the latter has not the expert knowledge, the sympathy, interest or enthusiasm required, although he may possess all these qualities for passenger car work.

Too Little Capital Is Common

Most dealers start without sufficient capital. Just how much ready cash the dealer should have depends upon his banking ability. If he has some property of any sort, he may borrow money on this at the bank and consequently does not need very much cash. He might even start in business on $1,000 or so.

Great care must be taken in selling trucks on time to see that the terms are so arranged that there will be no possibility of depreciation catching up with the time payment. In other words, on a given transaction, the dealer should always be in possession of more cash than is represented by the depreciation and wear and tear on the truck at that moment.

SOME GOOD SALES METHODS

BEFORE a man can even pretend to sell a truck, he must know something about transportation problems and possess cost figures.

Probably the easiest and best way of obtaining this information is that employed by one of the largest companies. The salesman makes a list of users of commercial vehicles, either horse or motor driven or both. These concerns may or may not be in the market for motor trucks, but this does not matter. He calls on them one by one and *sells them on the idea of keeping a careful record of what their delivery system costs them.*

Nothing is said about purchasing trucks—yet. His job is simply to sell the man on the idea of finding out how much it costs him to deliver a package if he is in the retail business; to deliver a ton of goods or a package of goods if he is in the wholesale business; or to figure the cost per ton per mile if he is hauling such material as coal, sand, dirt, stones, etc. The best effort of the salesman should be put forth in this work, and even then it is not always profitable to induce a man to keep a record of his costs.

Must Educate Prospects

The average business man knows less about what his delivery system is costing him than any other department of his business, yet usually it is the most expensive. He can tell you to the penny what his advertising costs, what his help costs, and so forth, but when it comes to how much his delivery amounts to per package or per ton or per trip he is lost. It is advisable to provide suitable forms to simplify and unify the keeping of cost records.

The form used by the Vim Motor Truck Co., Philadelphia, is a good example of what such a form should be like. It is a monthly report and there is one for each wagon or motor truck. It records the gasoline, oil, number of trips, total miles, number of customers, weight per load, the hours the truck is in service, the idle hours, including repairs, and then there is a monthly summary, which records the total trips, miles, customers, weight, service hours, idle hours, gasoline consumed, oil, repairs, tires, garage, driver's salary and fixed charges such as insurance, interest on the investment and depreciation. In this way the cost of the truck per month or per day, per trip, per mile, per package may readily be figured.

"AMBITION laughs at precedents," says Thayer. Nevertheless, the experience of others is always a valuable guide and the man who scorns to examine the methods of others is devoid of all ambition. Frankly, these are the methods of others. And they are bully good methods, too.—EDITOR.

Driver's Reports Are Valuable

This information is obtained very readily by supplying the driver with a pad of daily reports. He makes out one of these at the end of each day and turns it into the office.

The most important advantage of this record is that it gives the salesman an accurate knowledge of what it is actually costing this particular concern or individual to maintain its delivery system.

With these facts at hand, he can readily show where money will be saved by installing a truck.

The advantage of this plan is that the salesman educates himself in its operation as he works with it. Every call that he makes teaches him more about delivery problems. When he starts on his second week calling again on those whom he sold the first week, he knows more than he did when he started the first week. Thus he obtains a first-hand knowledge of delivery problems in a short time.

If possible, he should be able to furnish the prospect with operating figures on the truck he represents for the same line of business in the same town, and, if possible, under the same conditions as the prospect has to meet. It may not be possible to do this when a dealer is starting in, but as time progresses he should collect and keep this data as his most valuable asset.

First Sell Cost-Keeping

The first day the salesman starts out he may sell half a dozen concerns on the idea of keeping truck costs. The next day another half dozen and so on, so that in the course of a week or two he has a large number of concerns keeping costs on their delivery system.

Meanwhile he is becoming an expert on these matters. He should visit each customer at least once a week, and, if necessary, help in making out the customer's report.

He should not begin to talk truck until the owner of the business has a pretty fair knowledge of what his delivery or hauling system is costing him, and it may be a month or even 2 or more months until sufficient data are collected to convince the owner or rather to make him feel certain as to the accuracy of the figures. Meanwhile, however, the salesman is getting acquainted and when he comes around to go over the figures each week, he may have an opportunity to put in a good word or so for motor delivery in general or his line in particular.

When to Talk Truck

When sufficient data have been collected to show the owner exactly what the cost is, it is time for the salesman to show where he can reduce these figures and then the sale is made almost automatically.

One of the best features of this plan is that it gives the salesman an excuse for seeing the prospect frequently, so that by the time the psychological moment for the sale approaches the two principals are well acquainted.

In many instances, the relation goes deeper because the prospect feels indebted to the salesman for installing the system, for showing him the necessity

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of keeping accurate figures on this end of his business and showing him how it can be done easily.

The time it takes the prospect to keep the record will be offset many times by the saving effected and the delays that may be reduced or eliminated because of the knowledge it gives. The prospect has everything to gain by keeping such a record, and he owes it to himself to do so whether he buys a truck or not.

Study Delivery Problems

Intensive study of delivery problems is the best way to become expert. A prominent factory man says: "Study one delivery problem first. Get it down pat so that you will know just what a butcher or a grocer ought to expect as a day's work from his delivery outfit. You will certainly find yourself, and the things that you learn with the butchers' and grocers' delivery service will help you in solving delivery problems of other merchants. When you know the delivery problem, when you have signified your interest in your prospect's business, when you have gotten his confidence to the extent that he looks upon you as being expert in your knowledge of the delivery problem, he will buy your equipment to solve that problem with."

The merchant must be made to realize the value of knowing what his costs are. But, first, it is necessary for the salesman to understand what these advantages are, and until this knowledge is obtained the salesman is on uncertain ground.

Until he is sold on the idea of keeping costs, the salesman cannot surmount the barrier which prevents him from gaining the merchant's confidence, but after his confidence has been obtained he will buy what the salesman has to sell if it honestly fits his business.

When Figures Are Useless

In submitting figures on cost of operation it must be borne in mind that figures obtained in some other town or in some other line of business are not convincing. The prospect may know nothing whatever about operating conditions or costs in the drygoods business if he happens to be in the grocery business. Therefore, such figures simply tend to make him suspicious and check his confidence in the salesman. If he is in the grocery business, figures should be obtained for this line of business, and preferably for a business about the same size and character as his.

Likewise, even though the figures submitted fit his business exactly, but were obtained in some other town, he will naturally be suspicious of them because he does not know anything about conditions there. Differences in traffic regulations, in density of traffic, in conditions of pavement, in contour of the road surface, whether level or hilly—all these things have a powerful influence on delivery costs and he knows it.

Take a drygoods merchant, for example, who is operating three delivery cars. He is operating over practically the same territory that is covered by another merchant also possessing delivery cars. Assume that the salesman has already obtained data on the delivery service of the second merchant.

He then goes to the first merchant and sells him on the idea of keeping track of his delivery, then when he has his figures, the salesman shows him where one of the delivery trucks belonging to the other merchant is making more trips in less time, which shows him that the driver he has for this territory is not as efficient as he should be and steps are taken to correct this shortcoming.

Or the salesman may be able to show that the second merchant who is operating delivery cars sold him by this salesman is running for a cent less per mile, or, say, a half a cent less per package, than the first merchant who has another make of delivery car not as well suited for the work.

The record also shows in a very striking way the actual dollars and cents lost when the truck is laid up.

Another important reason for keeping an accurate cost record is to check tire mileage so that proper adjustment may be made with the tire concern.

Keeping Horse Costs

It is not necessary to take costs on horse-drawn vehicles over a very long period in order to get an accurate average. With motor vehicles, it is essential to take the figures over several weeks, inasmuch as an unusual repair bill or a smash-up or an excessive tire expense or some other unexpected circumstance might materially affect the average.

In selling the merchant on the prospect of keeping track of his costs probably the first thing he will say is that he is not in the market for the truck. True, he is not. And it would be foolish to assume that he was as long as no figures of his delivery department were available.

Because of the fact that the salesman is obtaining figures on many systems while any particular prospect has only an opportunity to study his own system, the salesman should shortly be in a position to point out the weaknesses in his system, which, if strengthened, would reduce his delivery costs, even if he continues the use of the vehicles that he has at present.

Should the salesman sell a truck without first persuading the owner to keep track of his cost figures, he should do everything in his power to get him to keep this record from the day his truck is purchased.

This record is an accurate gage on the satisfaction the customer is getting out of his purchase, and it indicates where his short-comings are and how he may realize more fully on his investment.

What the Figures Show

A study of the figures will show at the end of the month how his gasoline consumption compares with that of other users doing approximately the same amount of work. If it is high, something is wrong; it may be the driver or it may be the truck, and a trip to the service station is desirable. Even if the consumption is low, it gives an opportunity to suggest that he drop into the service station once a month to have the truck looked over so that in this way the consumption may be kept low.

In many instances of high gas consumption there are a series of causes—dirty motor, valve troubles, dry differentials, dragging brakes, soft tires. These things will be forecast on the cost sheet and thus can be taken care of before they develop into serious troubles.

In other cases the high cost of delivery has resulted in a further study of the delivery situation and a re-routing of the goods.

Rent First, Buy Later

When the prospect is doubtful as to whether it will pay him to buy a truck he may often be pushed over the line by hiring him one of the trucks and letting him actually find out for himself whether it can do the work. This is particularly true where the element of speed enters.

The question of speed may decide a sale. To illustrate: Suppose a contractor were considering a 5-ton truck. On a certain piece of work it might be possible for a truck with a speed of 8 m.p.h. to make 16 trips during a day, carrying 16 loads, a truck with a speed of 10 m.p.h. might then handle 20 loads and a truck capable of 12 m.p.h. 24 loads. This is assuming that practically no time was lost in loading or unloading.

On the other hand, if it were necessary to spend considerable time loading

Make Form Letters Sell Trucks

FORM letters can be a big factor in your truck profits if you give them the chance. They are practically a necessity if you are going to make your truck business grow.

These letters should be of several classes, one for each class of business. The letter to the contractors should deal with the truck in the contracting business and how it can save time and hauling costs.

The letter to the grocer should refer to the grocery business and should tell how time can be saved, the radius of trade extended and the business made to grow. By no means send a sand hauling letter to a druggist. It would be a joke.

These letters should be mailed out persistently to selected lists. They are the cheapest and most efficient form of extensive salesman you can get.

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and unloading the truck, the difference in speed might not be so important, although one of the first principles in motor delivery is that the time the truck stands idle should be minimized. Therefore, the most efficient methods must be used for loading and unloading. The truck is earning money only when it is moving; when it is standing still, it is less valuable than a horse-drawn vehicle because it represents a bigger investment.

Even though the cost of delivery by motor vehicle may be the same or even a little higher than that of horse vehicles in particular cases, it may be profitable because it allows quicker and more frequent delivery service, and this is a merchandising feature which must appeal.

Talk Greater Radius

One of the strongest arguments in favor of motor delivery is the increased radius which it permits. With horse vehicles it may be out of the question to deliver packages at a greater distance than 5 miles from the store, while with motor delivery this might be increased to 10 or 15 miles, allowing the merchant to compete in territory hitherto closed to him. Following is an interesting illustration of how this fact forced a man to buy a truck against his will: Three coal dealers were situated along a straight road about 5 miles apart. The first dealer on the road motorized his delivery system, enabling him to go into the second dealer's territory for business and take considerable from him. Shortly afterwards the third dealer abandoned his horses in favor of the more up-to-date method of transportation and he also obtained some of the second dealer's business. Finally, in self-defense, the latter was forced to discard his horses and get trucks.

In some cases, under existing conditions, it would not pay to change from horse delivery to motor delivery, but usually it can be shown beyond a shadow of a doubt that by changing over the increased radius of action will compensate for the extra cost, or, more likely, with the increased radius of action, the cost of delivery per unit will be less.

When It Won't Pay——

When it will not pay to change from horses to motor vehicles the salesman should tell the owner frankly that this is the case and not attempt to push the sale any further. If he sold this man a truck, the chances are that the owner would become a knocker and at least he would always feel that he had been unfairly treated.

The salesman will gain in the end by frankness. It may be that some time later the prospect will feel that a truck will pay him and at that time he is sure to come to the salesman who he knows will treat him honestly.

A case in point is that of an ice company with an ice house about 3 miles from the center of distribution. A team of horses and one large truck were used for hauling the ice. The management decided that it might be advisable to use a motor truck instead, but when the salesman found out that on three trips per day all the ice was hauled and that there was no immediate prospect for a demand for more ice he advised against it. If the truck had been put in place of the team it would have done the work in one-half or one-third the time and would have remained idle the rest of the day, as the company had no other use to put it to.

The obvious thing for the company to do in such a situation would be to increase its business so that it could work one truck to capacity, thus greatly reducing the haulage cost per ton of ice.

Making Beer Go Farther

Another interesting case of how increased radius of action made the installation of a truck profitable is that of a brewery located in a small town. The delivery of beer was well taken care of by one large two-horse truck. Investigation showed, however, that although a truck would not pay for the business then in hand, that there were several neighboring towns in which there were no breweries and to which beer was shipped by train.

By the installation of a motor truck the towns were readily brought within the radius of action and a large part of the business which formerly went to breweries located in distant cities was obtained.

Truck Literature Helps Out

IF you want to impress upon a building constructor that a truck will help him in his business there is nothing better—aside from a man-to-man analysis—than a booklet or folder that shows how your truck has done things for some other man in the same business.

You may be able to get good examples of this in your own town and print your own literature, but the truck factories should issue a good supply of this material and YOU SHOULD USE IT.

Take FULL advantage of printed matter. The factory wouldn't print it if it didn't believe it were valuable and even the worst of printed pieces can be used in some way if you can't get anything better. Cash in on this literature deal. You can't succeed in the field by depending entirely on personal calls.

Personal calls are all right, but the postage stamp must be made to make calls that are too numerous for you personally. A stamp will say Hello to a thousand men in one morning. No man can do that. Make the literature work.

HOW TO DIG UP PROSPECTS

MOTOR-TRUCK prospects must be dug up. It is very rarely that a man will walk into a showroom and demand a truck. Usually he must be sold on the idea of having a commercial vehicle and then be sold on some particular make.

This is quite different from passenger cars. In the first place, few trucks are as widely advertised as some passenger cars.

In the second place, the average man is already sold on the idea of owning a passenger car, and as soon as he has the money he makes that fact known to the dealers or the cars he is interested in.

Most of the men who might be prospects for trucks are not convinced that they need motor transportation. Some have never given it a serious thought, others have considered it but have not made up their minds. The majority of truck prospects are in this class.

Must Search Them Out

It is necessary to search them out and convince them that they can save money by purchasing trucks, or, if they already have trucks, it may be that the ones they have are not suited as well to their work as the line the dealer has for sale. In which case, it is merely a question of proving the advantages of the latter.

The dealer who takes an agency for a passenger car, hangs out a sign, and waits for business to come to him, will make some sales. The more popular the car, the more sales he will make, but the dealer who tries the same methods selling a truck must fail. Unless a dealer is on his toes, unless he is thoroughly aggressive, he will not make a success of the truck business.

The prospect must be dug up. But how? One method is that already described in connection with cost keeping and selling all the owners in a section on the idea and thus eventually making them prospects.

Where to Get Leads

Circular letters and advertising may be used, but usually prospects are obtained through acquaintances. Some one tells the truck salesman that so and so is in the market for trucks. He may get this information from a friend, from some truck user, from a truck driver.

Most good leads not obtained according to the method first mentioned are found in this way. Obviously, it is necessary for these salesmen or the dealer to be on good terms with all men if he is to make the most of this source of information. The friendship of everyone should be cultivated, whether of high or low degree. The salesman should make it a business to call regularly on the men who have already bought trucks.

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He should make it his business to find out whether the trucks he has sold are giving satisfaction and if the owner knows of anyone who is considering the purchase of a truck.

He should particularly cultivate the friendship of the driver of the truck, not by giving money but by taking a sincere interest in him and his affairs. The drivers gossip back and forth and often have valuable information regarding concerns considering the purchase of trucks.

When Trucks Are Bought

There are certain businesses which invariably purchase new trucks in the fall or early winter and others which purchase trucks in the spring or early summer and the prospect list should be made up with this idea fully in mind.

This statement holds true of coal dealers. Trucks generally are purchased in the fall, and for those who are not considering changing their equipment this is the best time to broach the subject. They realize that there is a hard, cold winter with slippery pavements, muddy roads to make delivery by horses slow and difficult. It is simply a question of convincing them that these troubles may be eliminated with motor trucks.

Advertising the Truck

NEWSPAPER advertising should play an important part in selling the truck. The business man is a persistent reader of newspapers, and he is interested in every business story and advertisement. The ads should be along save-cost and improve-business lines rather than along good-truck and staunch-construction lines. The ad that merely tells of the beauties or sturdiness of the truck is shooting over the business man's head. What he wants to know is how the truck will fit into his business. Tell him.

Consult your factory regarding advertising. Many factories have advertising plans that will help you put your truck over in your territory in a big way.

As to how much to spend and how to spend it, do this: Figure out how much truck business you think you can do. Allow 2 to 5 per cent for advertising. Divide it into parts for ads to be run on certain days for the next five months. Then plan anew.

Builders, brewers, contractors of all sorts, ice cream and soda water concerns, ice companies, usually only purchase trucks in the spring. Therefore, a special drive should be made for their business, beginning about the first of the year.

If the start is not made early, it will be impossible to get the proper share of the business, as it usually takes a long time to close a deal.

Concentrate, Concentrate

In introducing a truck, it is highly desirable to concentrate on the concern with the greatest prestige and do everything to sell this concern first. After that other sales will be easy. If when you go to some other prospect he asks you, "Well, who's using these trucks?" and you say, "Why, the National Amalgamated Mfg. Company—or whatever the name of the concern happens to be—has bought two of them," he will probably raise his eyes and say, "Oh, is that so?"

He has great respect for whatever this concern does and knows that when they make a purchase they get 100 cents value for every dollar expended. By cracking the hardest nut first it becomes easy to crack the others.

WHAT A SALESMAN MUST KNOW

HAVING decided to embark in the truck business, the first questions the dealer must ask himself are: Can my passenger car salesmen fill in their spare time by selling trucks? Does a car salesman make a good truck salesman? Is it best to obtain a man who knows nothing about the automobile business? If so, should I pick a man who has had selling experience, or should I hire a man without any selling training whatever and train him? Is it necessary to have a man who is an expert on truck construction? Must the salesman be an expert of delivery problems and costs?

IT is rarely that a good passenger-car salesman makes a good truck salesman, simply because it is next to impossible for him to unlearn the methods he has been accustomed to using.

It is difficult for him to attack the truck sales problem with an absolutely open mind and learn it just as though he had never known anything about selling passenger vehicles. He is prone to talk about the appearance of the machine, its quietness and ease of handling. He usually yields to the temptation to talk specifications.

Unless a man is more or less familiar with automobiles or trucks, he is not interested in the make or design of the carbureter or whether the valves are on one side or both sides; and even the important question of accessibility, and the arrangement of units to gain this end, are nothing to him even if he is familiar with these details to a certain degree. He does not attach the same importance to them that he would if he were purchasing a passenger car.

One method is to take a salesman from some other line and break him into the truck business, and another is to take a man, not a salesman, and teach him sales methods as well.

There is much to be said about each. If a man has had selling experience, the fundamentals he has learned will aid him. If he has not learned the fundamentals or has learned the wrong fundamentals, he may be worse than a green man, because selling a truck is entirely different from selling most lines of goods.

One Man's Experience

Some time ago the best salesman of one of the most widely known manufacturers of typewriters decided to sell trucks. He worked hard at the business for a year without putting through a single deal. The difficulty seemed to be that in his schooling as a typewriter salesman he had learned a series of more or less stereotyped arguments which could be used with almost equal effect on any prospect.

Whether he sold one typewriter or 500, the reasons why they should be purchased were practically the same—there was little variation. But when it came to selling a truck, each case was different. Each customer had to be attacked in a different way. The reasons why a road builder might buy a machine might be entirely different from those which would be used in selling a department store.

In the last analysis, his failure could probably be traced to the fact that he was not sufficiently up on the technical details of transportation. He did not know enough about cost per load, per truck-mile or per package.

The fault was not due to lack of ability, for at the end of the year he went back to the concern he had formerly been working for and immediately jumped to first place again. Which only goes to show that a successful salesman in some other line of work may not make a successful truck salesman.

Problems of Paying Salesmen

On the other hand, a man who is experienced in some other branch of selling, if he is worthy of a trial, usually must be paid more money than he is worth for a year or two. If, while the test is being made, he is paid something near the former salary, the dealer faces a large loss in case the man does not make good, and even if he does make good, by the time the dealer begins to realize on his investment the salesman may go to some other concern.

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There is this advantage in picking a man inexperienced in any line of selling. He is usually willing to work for less, and if he is made out of the right material, he has about as good a chance of making good as the experienced salesman, because he has only to learn the correct methods of selling a truck, while the other man has first to unlearn a part of what he already knows regarding selling in general.

Boys Who Made Salesmen

The scarcity of good truck salesmen has led one company to try a very interesting experiment in its largest branch, and, by the way, it is one of the biggest companies. The condition had been aggravated by the fact that so many men had joined the colors or taken up other work to help win the war. For this reason, and also because it seemed unduly difficult to teach older men the methods that the company desired to have pursued it has hired nine boys, ranging in age from 18 to 21. They were very carefully selected out of 200 applicants.

In the 2 months that these youngsters have been at work, they have given fair promise of surpassing the best salesmen at this branch, within a year, due to the fact that they are willing to do things the way that they are told.

This concern makes a delivery car and it must be assumed that most of the sales handled by these young men are single ones, averaging considerably less than $1,000. It is not to be expected that a young fellow would have the same success if he attempted to sell trucks costing $4,000 or $5,000 or $6,000, as experience has proved that when a man comes to spend this much money he often objects to dealing with a boy.

Even men between 25 and 30 occasionally have to admit that, in closing a deal involving several expensive trucks, the man doing the buying prefers to be seen by an older man.

The Most Successful Salesmen

To quote a prominent factory sales manager, "The most successful salesmen that I know are the men that have the greatest interest, who take to heart most seriously the business of their prospects and customers; they study their prospect's business, compare it with the business of merchants in similar lines, they study the industry, they study competition. All of this enables them to be a constructive help to their clients and they are looked upon by their customers as part of the organization, as retained advisers or as experts in their line.

The salesman should not be looked upon as a salesman but rather as an expert on delivery problems, and if the salesman cultivates this idea the sales will follow naturally.

If he is an expert he might as well make the most of it by offering his services as an expert. There are many, many people with delivery problems which must be solved, and if he knows as much as he should know, he can do a lot toward solving these problems, and, incidentally, he will sell trucks.

In a sense, the successful truck salesman must be an efficiency engineer on the matter of transportation. He must know delivery costs for various classes of service and these costs must be those *for his own locality*. For some other part of the city or some other town or city will hardly interest his prospect, because road and traffic conditions undoubtedly are different.

There is some question as to just how much a salesman should know about the mechanical details of a truck in order to be a successful salesman. Certain it is that some salesmen have been very successful with no knowledge whatever as to truck construction, and others have been successful knowing every detail.

How Much Mechanical Knowledge?

The best salesman in one of the largest truck showrooms in the country did not even know how to drive the vehicle he was selling, much less did he know anything about what was inside. Another states that it is 3 months since he has raised the hood. This lack of knowledge seemed to be no handicap and in a way it was an advantage because there was no chance of his talking technical details when he had other things more important to say, as will be explained later. Whether this is desirable or not, it serves to emphasize the necessity of being versed in delivery problems.

What the owner is really interested in is *how much he can save*. The size of the motor or the make of rear axle is only of interest in so far as it bears on this question. What he wants to know is how much cheaper it will be per mile, or how many more loads per day he can handle, or how much his radius of action will be increased, or how much cheaper it will be per package. The cost per ton-mile or per package includes all arguments regarding the advantages of one make of motor over another, one method of frame construction over another, one type of clutch adjustment over another and so forth.

The problem of the truck salesman is to sell results. Therefore, he is not nearly so interested in specifications. The exception to this rule is in the case of a man who has had more or less experience operating trucks. He may know the relative merits of different makes of motors, or know whether a 4¼-in. bore is better or worse for his particular case than a 4½.

MOTOR TRUCK DELIVERY RECORD

VIM MOTOR TRUCK CO., PHILADELPHIA

(SEE OTHER SIDE FOR DIRECTIONS)

*Month of*_____*19*____ *Route No.*_____

Day	Gasoline	Oil	Trips	Miles	No. of Customers	Weight Per Load	Service Hours	Idle Hours Repairs, Etc.
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								
11								
12								
13								
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30								
31								

Total Trips Per Month _____

" Miles " " _____

" Customers " " _____

" Weight " " _____

" Service Hours " " _____

" Idle " " " _____

TOTAL VARIABLE CHARGES

Gas Consumed Per Month, Gals. _____ @ _____ Per Gal.

Oil " " " Pints _____ @ _____ " "

Repairs " " $ _____

Tires " " $ _____

Garage " " $ _____

Driver " " $ _____

FIXED CHARGES

Insurance, Fire and Theft $ _____

" Liability $ _____

Interest on Investment $ _____

Depreciation $ _____

REMARKS _____

This is the form developed by the Vim Company for recording the cost of delivery service to the merchant

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Also the man who is up on automobile or truck construction may be interested to know that the motor is made by so and so and the gearbox by so and so and the rear axle by so and so, but after all, these facts are not so vital to him as the real proof that the purchase will save him a certain number of dollars.

WHAT SALES MANAGERS SHOULD DO

WEEKLY or bi-weekly sales meetings have been found of great value. Mock sales are set up and men from different territories sell each other, using the arguments that have been presented to them in their daily work. This training is invaluable because it instructs all the men in the problems and the solution of the problems presented to each one of them.

Salesmen's meetings should be arranged at least once a week for the interchange of ideas and data obtained during the week. The problems of each salesman should be discussed, and the best solution decided upon. Also, information regarding delivery problems and delivery costs, etc., should be interchanged. Probably during the week one of the salesmen has learned a lot about milk delivery, therefore it is up to him to present a brief paper on this subject so that when some of the other salesmen run across a milk prospect, they will have the necessary information to make a sale.

Salesmen Should Report

In fact, it may be advisable to require each salesman to dictate a report of unusual experiences or of special data so that the stenographer can furnish all the salesmen with copies. In this way, the record is down in black and white and there is no danger of the salesmen forgetting.

The sales manager should make it his business to visit all purchasers of trucks periodically, so that in case a salesman leaves he will not take his trade with him. If the salesman is the right sort of a man, the truck purchasers have confidence in his judgment and in his standing as an expert on transportation problems and on trucks.

Salesmen Hold Their Trade

In this way he shortly becomes very well acquainted with his purchasers and so firmly entrenched is he in their business affections that there is a good chance that in case he should change to some other line or start in business for himself he would take most of his friends with him.

As a measure of self-defense, as well as to see that the salesman is on the job and doing his work properly, it is absosutely essential for the sales manager occasionally to go out and meet customers with the salesman.

Then when it comes to breaking in a new man as salesman, the situation is much simplified because the sales manager can go around with him and introduce him to all the customers and this has more weight than if he should go around and introduce himself.

A case in point is that of a salesman who had worked a certain territory selling a well-known truck for several years. Recently he started out for himself and took the agency for another truck. In this case the salesman was well acquainted with users in his territory and the sales manager did not know these people at all, with the result that since the first of January the salesman has sold 18 trucks and the new salesman has sold just two, notwithstanding the fact that he has a better known, more widely advertised li...

One of the most important functions of the sales manager is to act as a reservoir of enthusiasm for the salesmen. The man who is facing prospects every day may get discouraged. He may lose confidence in himself or in the truck he is selling or in business conditions or all three, particularly if it has been several weeks, or possibly months, since he has made a sale.

But before he gets down in the dumps the sales manager should take hold of him and rekindle his enthusiasm to white heat.

In addition to talking to him it may be a good idea to go out with him and help him in his work. It is easier to take a rebuff when there is another man to divide it with.

Furthermore, the presence of the sales manager may show where the salesman is weak and why he is not successful. But even the most successful, the most enthusiastic salesman may have his days of depression and the easiest way to bring him back to normal is for the sales manager to take him in hand and work with him.

Planning a Truck Salesroom

It Should Be Simply Furnished Like a Business Place for Business Men

THE truck showroom should be modest and businesslike, and no larger than absolutely necessary. The difference between a truck showroom and a passenger-car showroom is the difference between a man's parlor and a man's office. Luxury is all right in a car showroom, but entirely out of place in a truck showroom.

A showroom large enough to provide space for a single truck will usually be sufficient for the average dealer, although in the larger cities more space to provide for more trucks may be advisable.

Inasmuch as the prospect rarely comes to the showroom, it is not of prime importance. At the same time there should be a showroom, and it should be neat and businesslike, so that if the prospect does come, he will be favorably impressed and not go away wondering what kind of business men those people are in attempting to do business in such slovenly quarters.

Furnishing the Showroom

The opinion of a prominent and successful dealer regarding the furnishing of the showroom is interesting, although the incident is not to be taken as a hard and fast rule. This dealer started in business with practically unlimited capital. One of the first things he had to decide was how he would furnish the showroom and offices. One of his assistants was strong for mahogany furniture and everything that goes with it. But the dealer finally decided that oak was the proper thing for these reasons.

He knew that many of his customers would be men who were not used to fine surroundings and would feel out of place in them—actually afraid of mahogany. Then he felt that many other prospects would look upon luxurious furnishings as an evidence that the company was rolling in wealth, and this would make them insistent upon an allowance.

Where the truck line consists of more than one model, the question facing the dealer is whether it is necessary to have show trucks and demonstrating trucks or both for each one of the models. Emphatically, no. In every line of trucks there is one model which is more popular and is usually considered more satisfactory than any other, and this is the one which should be purchased for show purposes and demonstrating. There is no reason why the one truck should not be used for both.

Inasmuch as the trucks in a line generally resemble each other, the features of any model in the line may be shown on this model, and if this is not sufficient, it may be possible to supplement this work by taking the prospect to some neighboring dealer who has the model

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desired. After the dealer has a few of the most popular models in operation, it is desirable for him to sell his show model and purchase one of another model. In this way he is able to show any people who are interested in the first model trucks actually in operation, and those who may be interested in the second model can look at the show or demonstrating truck, the model on exhibition, and supplement this with photographs and drawings.

Giving Demonstrations

What sort of a demonstration to give is a question. The best demonstration is to show a truck at work. It carries with it a winning selling argument. Would a prospect rather have a demonstration in a brand new truck in the hands of an expert driven with the certainty that it was going to perform perfectly, or would he rather see a truck several months, or possibly several years old, operated by a driver under average working conditions?

The prospect is not so interested in the way a new truck is going to perform or how it is going to look as he is in knowing how that truck will perform after hard usage. Furthermore, by showing the prospect a truck in operation, he is able to talk to the man who has been with that truck every day and knows its advantages and its weaknesses.

In introducing a new line of trucks, it is not possible to follow this method, in which case a demonstration will not prove as much as facts showing the reliability of the company, reputation for building good trucks, the quality of the units in the truck, the ability of the dealer to furnish parts quickly and give satisfactory service quickly.

Quite often a demonstration is not required. Then, again, if the question of whether a given truck can perform a certain duty in less time or more economically than some other truck under consideration, it may be necessary to give a demonstration.

But whatever actual work is done for a prospect, a regular charge should be made the same as if the truck is hired from some other individual.

Demonstration Unnecessary

It should be obvious that a demonstration should not be necessary except to prove a particular point, because the truck is so different from a passenger car. The purchaser of the latter is interested in knowing the car speed, its hill-climbing ability, quietness, easy-riding qualities, comfort of upholstery and the ease of control over steering wheel, levers, pedals, etc. But the owner of a truck is usually concerned about just one thing and that is, will it do the work more cheaply?

Speed Is Necessary in Truck Service

Repairs on Passenger Cars and Trucks May Readily Be Done in the Same Shop

SERVICE is of even greater importance to the truck owner than to the car owner. If the car breaks down the owner can use street cars or trains. Therefore, it does not greatly matter whether the car is laid up for an hour, or a day, or a week. It is a small inconvenience, but usually is nothing more. But every hour a truck is laid up a certain amount of money is lost.

It has a certain daily work to perform, and when it is on the sick list it is usually necessary to hire another vehicle to take its place. And the money spent for this vehicle is a loss; hence the great importance of selling a truck that will spend the minimum of time in the repairshop and the importance of having a shop which will repair the vehicle quickly.

Demonstrate Savings

The dealer who can demonstrate to his prospect that he is in a position to minimize losses due to repairs and adjustments—and it should be frankly admitted that every truck, in fact every piece of machinery, requires periodical repair and adjustment—has an unbeatable talking point. There is no getting away from that fact.

Adequate Parts Stock

The dealer should have an adequate stock of parts. No rules can be laid down as to what these parts must be, because necessarily it will vary with the number of trucks in operation and the reliability of the different units. More than one sale has been made by showing the prospect the parts room, to demonstrate to him that there will be no hold-up when parts are needed.

A service station is even more necessary than a showroom, since most of the selling is done outside. Generally the salesman goes to the prospect, instead of the prospect coming to the salesman, as is more usual in marketing passenger cars.

Night Service

A service station that can do night work will save many dollars for the truck owner, and it is therefore a good selling argument. However, there may not be enough business to warrant this being done. In that case it should be possible to arrange with the men to work nights when necessary. With a night force most repairs may be made at night, so that the daytime running of the truck is not interfered with. Thus the owner incurs no loss beyond the actual expense of the repairs.

Preferred Work

Some repairshops doing work on both passenger cars and trucks make it a rule that emergency work on trucks should be given preference over work on passenger cars, and this is a sensible rule, inasmuch as business should come before pleasure.

Repairs on trucks and passenger cars may readily be done in the same shop. An experienced mechanic on passenger-car work soon becomes expert on truck repairs, so that the combination of truck sales and passenger-car sales does not apply in the repairshop.

When a customer's truck must be repaired it may be desirable, if it is a truck that he cannot well spare from work, to rent him any truck that is available. This might be the demonstrator or show car or it might be a truck taken in trade.

Educate the Driver

A large part of the successful performance of a truck is due to the driver, and he is the factor which must not be overlooked. In the first place, when a truck is sold, care should be taken by the dealer to see that a satisfactory driver is put on the truck—either a driver he himself knows and can personally recommend, or an employee of the purchaser of the truck. In the latter case it is necessary to carefully and completely instruct the man in the operation of the vehicle. To do this, it probably will be necessary to get a competent mechanic or instructor to accompany the driver for a week, but there should be a strict understanding between the dealer and purchaser that this man furnished should not be called upon to do any driving except in the presence of the man who is receiving the instruction. If this stipulation is not made, there will be some short-sighted purchasers who will be content to use this man as a free chauffeur and then look elsewhere thereafter. When a truck is giving unsatisfactory service, quite often the trouble may be justly laid to the driver and the change of drivers may remedy all the difficulty.

Educate Horse Owners

The owner of a truck, particularly a man who has been used to horses, must

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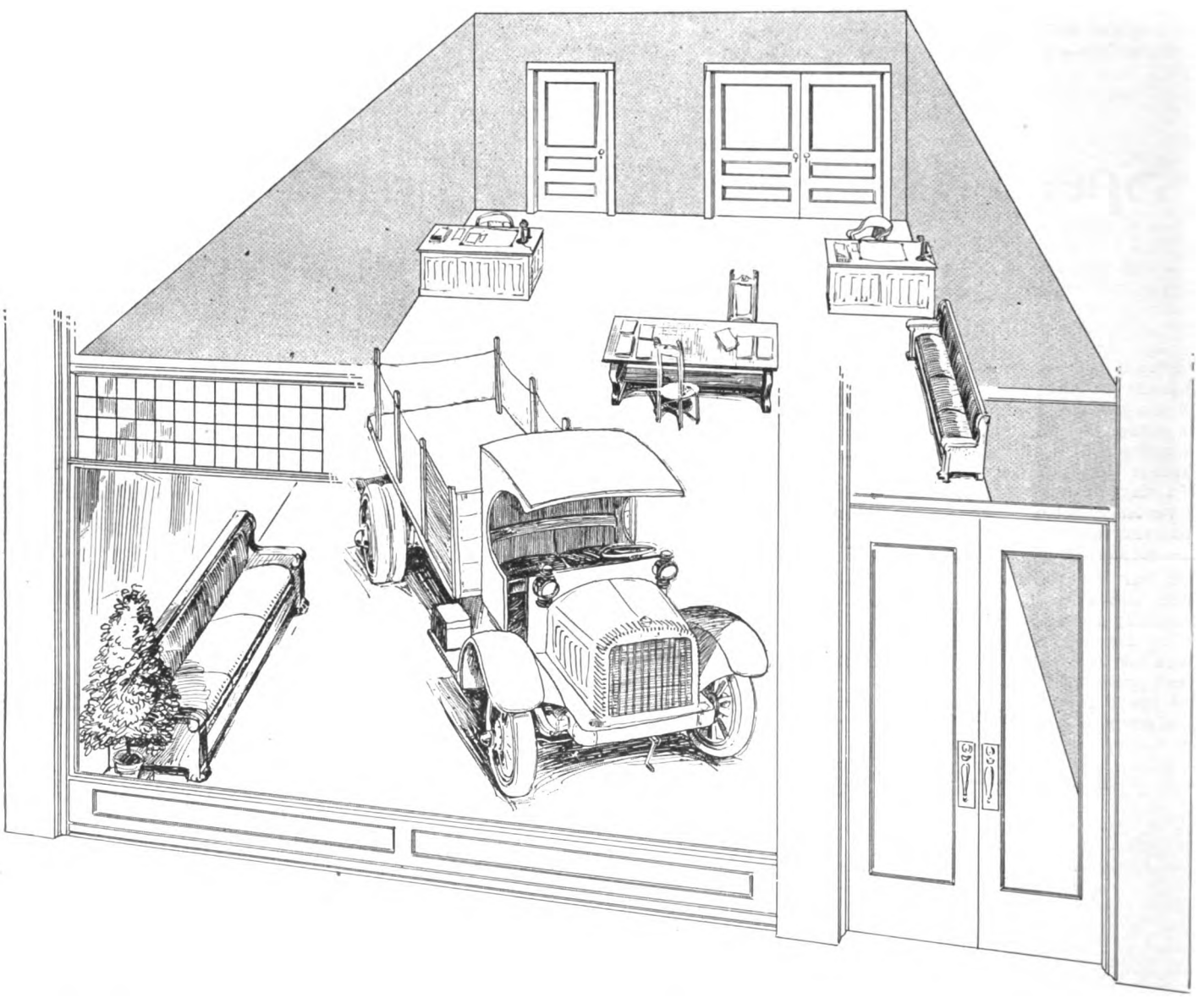
be educated into the difference between the two modes of transportation. A horse is fed regularly and is allowed an ample resting period every night. The feed gives an emphasis of two purposes. It not only provides him with energy for the next day's work, and therefore is analogous to gasoline, but also it replaces wear and tear of the day's work just completed and the rest obtained also aids in making him good as new for the next day. A truck, however, is a different proposition. Each day's work tells on it slightly, and a rest period over night will not bring it back to its former condition. It is imperative to minimize this wear and tear by giving it proper lubrication and adjusting parts whenever they need it and not let them go too long.

Trucks Take More Room

Given the same service station as was used in passenger car work, when trucks are introduced, the capacity of the station is about cut in two. Many trucks occupy a space of about 22 x 10 ft., as against the passenger car's 15 x 7 ft. And the aisles must be wider, as it is not an easy matter to jack a truck up and slew it around on slewing castors.

If an elevator be used, the average passenger car elevator will be found too small. General practice seems to recommend a 22 x 10 ft. elevator of about 10-ton capacity. And if old buildings be used, a competent building inspector should be consulted to see that the floors possess ample strength to carry the trucks that will be placed upon them.

Truck Showroom Should Be Businesslike



SIMPLICITY should be the keynote of the design. It should be furnished in the same spirit that an office is done. Utility, neatness, efficiency are the factors to consider. Elaborate decorations, luxurious furniture, expensive rugs, and the like, are out of place. It differs from a car showroom in the same way that a truck differs from a car. One is strictly for business, and the other combines business and pleasure in varying proportions. Therefore, the difference in atmosphere between the car and truck showroom is the difference between the car and truck.

Except in the major cities, a large showroom is not necessary. Usually, a room big enough to display one truck well will be sufficient. There should be a table for prospects and desks for the salesmen, and settees. Appropriate pictures, and possibly a few potted plants and a rug complete the picture.

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A Directory of Motor Truck Makers

210 Manufacturers of Commercial Vehicles for 1918—188 Gasoline—Two Steam and Nine Electric—Models Made in Tons Capacity

Gasoline Vehicles

Name	Manufacturer	Address	MODELS IN TONS CAPACITY (Figures refer to capacity, not number of models)													
			Under ¼	¼	½	1	1½	2	2½	3	3½	4	5	5½	6	6½	7 and over
A. & B.	American & British Mfg. Co.	Providence, R. I.								3			5				
Acason	Acason Motor Truck Co.	Detroit, Mich.					1½	2			3½		5				T
Acme	Cadillac Auto Truck Co.	Cadillac, Mich.				1		2			3½						
Allis-Chalmers	Allis-Chalmers Mfg. Co.	Milwaukee, Wis.											5				
American	American Motor Truck Co.	Detroit, Mich.									3½						
Armleder	O. Armleder	Cincinnati, Ohio						2			3½						
Atlas	Martin Truck & Body Corp.	York, Pa.		¾													
Atterbury	Atterbury Motor Car Co.	Buffalo, N. Y.					1½	2			3½						
Autocar	Autocar Co.	Ardmore, Pa.						2									
Available	Available Truck Co.	Chicago, Ill.				1		2			3½		5				
Avery	Avery Co.	Peoria, Ill.				1		2		3			5				
Barber	Barber Motors Corp.	Brooklyn, N. Y.															T
Barker	C. L. Barker	Norwalk, Conn.				1		2									
Bauer	Bauer Machine Wks Co.	Kansas City, Mo.		½	¾												
Beck	Beck Motor Truck Works	Cedar Rapids, Iowa				1	1½	2									
Beech Creek	Beech Creek Truck & Auto Co.	Beech Creek, Pa.								3							
Bell	Bell Motor Car Co.	York, Pa.		⅜													
Bessemer	Bessemer Motor Truck Co.	Grove City, Pa.				1		2			3½						
Bethlehem	Bethlehem Motors Corp.	Allentown, Pa.					1½		2½								
Blair	Blair Motor Truck Co.	Newark, Ohio						2		3			5				
Bourne	Bourne Magnetic Truck Co.	Philadelphia, Pa.						2			3½						
Brinton	Brinton Motor Truck Co.	Philadelphia, Pa.				1			2½								
Briscoe	Briscoe Motor Co.	Jackson, Mich.		½		1											
Brockway	Brockway Motor Truck Co.	Cortland, N. Y.					1½	2			3½						
Buick	Buick Motor Co.	Flint, Mich.			¾												
Burford	Taylor Motor Truck Co.	Fremont, Ohio						2			3½						
Chase	Chase Motor Truck Co.	Syracuse, N. Y.				1	1½		2½	3	3½						
Clydesdale	Clyde Cars Co.	Clyde, Ohio			¾		1½	2			3½		5				
Collier	Collier Motor Truck Co.	Sandusky, Ohio			¾												
Columbia	Columbia Motor Truck & Trailer Co.	Pontiac, Mich.				1		2									
Commerce	Commerce Motor Car Co.	Detroit, Mich.			¾	1											
Concord	Abbott-Downing Co.	Concord, N. H.				1		2									
Continental	Continental Motor Truck Co.	Chicago, Ill.				1	1½	2			3½						
Corbitt	Corbitt Motor Truck Co.	Henderson, N. C.				1	1½	2	2½		3½		5				
Corliss	Corliss Motor Truck Co.	Corliss, Wis.		½													
Couple-Gear	Couple-Gear Freight Wheel Co.	Grand Rapids, Mich.									3½		5				
Croce	Croce Automobile Co.	Asbury Park, N. J.		½													
Dain	Dain Mfg. Co.	Ottumwa, Iowa				1											
Dart	Dart Motor Truck Co.	Waterloo, Iowa				1		2			3½						
Dayton	Durable Dayton Truck Co.	Dayton, Ohio						2			3½		5				7½
D-E	Day-Elder Motors Co.	Newark, N. J.			¾	1	1½		2½								
DeKalb	DeKalb Wagon Wks. Co.	DeKalb, Ill.						2	2½								
Denby	Denby Motor Truck Co.	Detroit, Mich.				1	1½	2	2½								
Denmo	Grant Motor Car Corp.	Cleveland, Ohio		½			1½										
Diamond-T	Diamond-T Motor Car Co.	Chicago, Ill.				1	1½	2			3½		5				
Dispatch	Dispatch Motor Car Co.	Minneapolis, Minn.			¾												
Doane	Doane Motor Truck Co.	San Francisco, Cal.							2½						6		
Dorris	Dorris Motor Car Co.	St. Louis, Mo.			¾			2									
Duplex	Duplex Truck Co.	Lansing, Mich.						2		3							
Durable	Durable Motor Truck Co.	Hammond, Ind.															
Ellsworth	Mills-Ellsworth Co.	Keokuk, Iowa		½													
Fageol	Fageol Motors Co.	Oakland, Cal.						2									
Fargo	Fargo Motor Car Co.	Chicago, Ill.						2									
Federal	Federal Motor Truck Co.	Detroit, Mich.				1	1½	2			3½		5				
Forschler	Forschler Wagon Co.	New Orleans, La.			¾	1	1½	2									
Ford	Ford Motor Co.	Detroit, Mich.				1											
F. W. D.	Four Wheel Drive Auto Co.	Clintonville, Wis.								3							
Fulton	Fulton Motor Truck Co.	Farmingdale, L. I.					1½										
Gabriel	Gabriel Auto Co.	Cleveland, Ohio				1		2			3½						
Garford	Garford Motor Truck Co.	Lima, Ohio				1	1½	2			3½		5		6		
Gary	Gary Motor Truck Co.	Gary, Ind.				1	1½	2	2½		3½						
G. A. Schacht	G. A. Schacht Motor Truck Co.	Cincinnati, Ohio						2	2½		3½		5				
Gem	Gem Motor Car Corp.	Grand Rapids, Mich.		½													
Geneva	Geneva Wagon Co.	Geneva, N. Y.			¾												
Gersix	Gerlinger Motor Car Co.	Portland, Ore.						2½									
Globe	Globe Motor Truck Co.	E. St. Louis, Ill.				1											
G. M. C.	General Motors Truck Co.	Pontiac, Mich.			¾	1	1½	2			3½		5				
Gramm-Bernstein	Gramm-Bernstein Co.	Lima, Ohio				1	1½	2	2½		3½		5				
G. V.-Mercedes	General Vehicle Co.	Long Island City, N. Y.													6		
Hahn	Hahn Motor Truck Co.	Hamburg, Pa.				1		2									
Hall	Lewis-Hall Iron Wks.	Detroit, Mich.						2			3½		5				
Harrison	Robert Harrison Co.	South Boston, Mass.									3½						
Harvey	Harvey Motor Truck Co.	Harvey, Ill.							2½		3½		5				7
Hawkeye	Hawkeye Mfg. & Repair Co.	Sioux City, Iowa					1½										
Hendrickson	Hendrickson Motor Truck Co.	Chicago, Ill.						2			3½						

Heavy type represents vehicles whose specifications are given in this issue.

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A Directory of 210 Manufacturers of Gasoline, Steam,

Name	Manufacturer	Address	MODELS IN TONS CAPACITY *Figures refer to capacity, not number of models*													
			Under ½	½	¾	1	1½	2	2½	3	3½	4	5	5½	6	6½	7 and over
Hewitt-Ludlow	Hewitt-Ludlow Auto Co	San Francisco, Cal									3½						
Highway	Highway Tractor Co	Indianapolis, Ind															
Higrade	Higrade Motors Co	Grand Rapids, Mich			¾	1											
Hoover	Hoover Wagon Co	York, Pa			¾												
Horner	Detroit-Wyandotte Motor Co	Wyandotte, Mich					1½	2		3			5				
Hurlburt	Hurlburt Motor Truck Co	New York City					1½	2			3½		5				7
I. H. C	International Harvester Corp	Akron, Ohio			¾	1		2									
Independent	Independent Motors Corp	Port Huron, Mich				1		2									
Indiana	Indiana Truck Co	Marion, Ind				1		2			3½		5				
Kearns	Kearns Motor Car Co	Beavertown, Pa		½													
Kelly-Springfield	Kelly-Springfield Motor Truck Co	Springfield, Ohio					1½		2½		3½	4	5		6		
Kimball	Kimball Motor Truck Co	Los Angeles, Cal															
King	A. R. King Mfg. Co	Kingston, N. Y									3½						
Kissel	Kissel Motor Car Co	Hartford, Wis			¾	1½		2			3½						
Kleiber	Kleiber Co., Inc	San Francisco, Cal				1	1½	2	2½		3½		5				
Knox	Knox Motors Co	Springfield, Mass								3							T
Koehler	H. J. Koehler Motors Corp	Newark, N. J					1¼			3							
Lambert	Buckeye Mfg. Co	Anderson, Ind				1											
Landshaft	William Landshaft & Son	Chicago, Ill				1		2									
Lane	Lane Motor Truck Co	Kalamazoo, Mich					1½		2½		3½						
Lange	Lange Motor Truck Co	Pittsburgh, Pa					1½		2½								
Lapeer	Lapeer Tractor-Truck Co	Lapeer, Mich								3			5				
Larrabee	Larrabee-Deyo Motor Truck Co	Binghamton, N. Y				1	1½		2½		3½						
Lawson	Lawson Mfg. Co	Pittsburg, Pa		½													
Lenox	Lenox Motor Car Co	Boston, Mass															
Lippard-Stewart	Lippard-Stewart Motor Car Co	Buffalo, N. Y		½	¾	1	1½	2									
Little Giant	Chicago Pneumatic Tool Co	Chicago, Ill			¾	1	1½	2									
Lombard	Lombard Auto-Tractor-Truck Corp	New York City											5				
Lumb	Lumb Motor Truck & Tractor Co	Aurora, Ill							2½								
Maccar	Maccar Co	Scranton, Pa					1½		2½		3½			5½			
Mack	International Motor Co	New York City				1	1½	2			3½		5	5½		7	7&T
Manly	Manly Motor Corp	Chicago, Ill					1½	2	2½								
Master	Master Trucks, Inc	Chicago, Ill						2									
Maxfer	Maxfer Truck & Tractor Co	Chicago, Ill															
Maxwell	Maxwell Motor Co	Detroit, Mich				1											
Menominee	Menominee Motor Truck Co	Menominee, Mich			¾	1	1½	2			3½						
Mercury-Bulley	Mercury Mfg. Co	Chicago, Ill															T
Modern	Bowling Green Motor Car Co	Bowling Green, Ohio					1½										
Moreland	Moreland Motor Truck Co	Los Angeles, Cal				1	1½		2½			4	5				
Muskegon	Muskegon Engine Co	Muskegon, Mich						2									
Nash	Nash Motors Co	Kenosha, Wis				1		2									
Nelson & LeMoon	Nelson & LeMoon	Chicago, Ill					1½	2		3			5				
Netco	New England Truck Co	Fitchburg, Mass						2									
New York	Tegetmeier & Reipe	New York City					1½	2									
Niles	Niles Car & Mfg. Co	Niles, Ohio				1		2									
Noble	Noble Motor Truck Co	Kendallsville, Ind						2									
OK	Oklahoma Auto Mfg. Co	Muskogee, Okla															
Old Hickory	Kentucky Wagon Mfg. Co	Louisville, Ky			¾												
Old Reliable	Old Reliable Motor Truck Co	Chicago, Ill					1½	2	2½	3		4	5				7
Oneida	Oneida Motor Truck Co	Green Bay, Wis				1	1½	2			3½						
Overland	Willys-Overland Co	Toledo, Ohio		⅜													
Packard	Packard Motor Car Co	Detroit, Mich				1		2	2½			4	5		6		7
Packet	Packet Motor Truck Co	Minneapolis, Minn	¼														
Palmer	Palmer-Meyer Motor Car Co	St. Louis, Mo				1		2									
Peerless	Peerless Motor Car Co	Cleveland, Ohio						2		3		4	5		6		
Phoenix Centiped	Phoenix Mfg. Co	Eau Claire, Wis											5				
Pierce-Arrow	Pierce-Arrow Motor Car Co	Buffalo, N. Y						2					5				
Pull-More	Pull-More Motor Truck Co	Pittsburgh, Pa								3							
Rainier	Rainier Motor Corp	New York City		½													
Reo	Reo Motor Car Co	Lansing, Mich			¾			2									
Rennoc-Leslie	Rennoc-Leslie Motor Co	Philadelphia, Pa								3							
Republic	Republic Motor Truck Co	Alma, Mich			¾	1	1½	2			3½		5				
Reya	Reya Co	Napoleon, Ohio				1											
Riker	Locomobile Co	Bridgeport, Conn								3		4					
Robinson	Golden West Motors Co	Sacramento, Cal						2									
Royal	Royal Motor Truck Co	New York City				1			2½		3½		5		6		7
Rowe	Rowe Motor Truck Co	Downington, Pa				1		2		3			5				
Rush	Rush Motor Truck Co	Philadelphia, Pa		½													
Sandow	Sandow Motor Truck Co	Chicago, Ill				1		2									
Sanford	Sanford Motor Truck Co	Syracuse, N. Y					1½		2½		3½						
Schleicher	SchleicherMotor Vehicle Co	New York City								3			5				
Selden	Selden Motor Vehicle Co	Rochester, N. Y			¾	1		2	2½		3½		5				
Seneca	Seneca Motor Truck Co	Fostoria, Ohio															
Service	Service Motor Truck Co	Wabash, Ind				1	1½	2			3½		5				
Signal	Signal Motor Truck Co	Detroit, Mich					1½	2	2½			4	5				
Standard	Standard Motor Truck Co	Detroit, Mich						2			3½		5				
Steele	W. M. Steele	Worcester, Mass						2		3		4	5				
Stegeman	Stegeman Motor Car Co	Milwaukee, Wis						2		3		4	5				7
Sterling	Sterling Motor Truck Co	Milwaukee, Wis							2½		3½		5				7
Stewart	Stewart Motor Corp	Buffalo, N. Y			¾		1½	2									
Studebaker	Studebaker Corp	South Bend, Ind		½		1											
Sullivan	Sullivan Motor Car Co	Rochester, N. Y					1½	2									
Superior	Superior Motor Truck Co	Atlanta, Ga				1		2									
Taylor	Taylor Motor Truck Co	Fremont, Ohio				1	1½		2½		3½		5				
Thomas	Consolidated Motors Corp	Schenectady, N. Y						2			3½						
Tiffin	Tiffin Wagon Co	Tiffin, Ohio			¾	1	1½		2½		3½		5		6		
Titan	Millman Motor Truck Co	Milwaukee, Wis											5				
Topp-Stewart	Topp-Stewart Tractor Co	Waukesha, Wis															
Tower	Tower Motor Truck Co	Greenville, Mich						2									
Transport	Transport Tractor Co	Long Island City, N. Y											5				
Triangle	Triangle Motor Truck Co	St. Johns, Mich					1½										
Turnbull	Turnbull Motor Truck & Wagon Co	Defiance, Ohio															

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Electric and Electric Industrial Vehicles for 1918—Concluded

Name	Manufacturer	Address	MODELS IN TONS CAPACITY *Figures refer to capacity, not number of models*													
			Under ½	½	¾	1	1½	2	2½	3	3½	4	5	5½	6	6½	7 and over
Union	Union Motor Truck Co	Bay City, Mich							2½								
United	United Motors Co	Grand Rapids, Mich						2			3½	4	5				
United Four-Wheel Drive	United Four-Wheel Drive Co	Chicago, Ill								3							
Universal	Universal Service Co	Detroit, Mich					1½	2		3							
U. S	United States Motor Truck Co	Cincinnati, Ohio						2			3½		5				
Van Winkle	Van Winkle Motor Truck Co	Atlanta, Ga															
Velie	Velie Motors Corp	Moline, Ill									3½						
Vim	Vim Motor Truck Co	Philadelphia, Pa		½				2									
Voltz	Volta Bros	Chicago, Ill								3			5				
Walter	Walter Motor Truck Co	New York City											5				
Watson	Watson Wagon Co	Canastota, N. Y											T				
Ware	Twin City Four Wheel Drive Co	St. Paul, Minn									3½						
Western	Western Truck Mfg. Co	Chicago, Ill															7
White	White Co	Cleveland, Ohio			¾		1½			3			5				
White Hickory	White Hickory Wagon Mfg. Co	Atlanta, Ga					1½										
Wichita	Wichita Falls Motor Co	Wichita Falls, Tex				1	1½	2	2½		3½		5				
Wilcox	H. E. Wilcox Motor Co	Minneapolis, Minn				1	1½	2			3½		5				
Wilson	J. C. Wilson Co	Detroit, Mich						2			3½						
Winther	Winther Motor Truck Co	Winthrop Harbor, Ill						2		3		4	5		6		
Wisconsin	Myers Machine Co	Sheboygan, Wis					1½		2½								
Witt-Will	Witt-Will Co	Washington, D. C				1			2½								
W-S	Weier-Smith Truck Co	Birmingham, Mich							2½								

Steam Vehicles

Doble	Doble Laboratories	San Francisco, Cal				1											
Steamoter	Steamotor Truck Co	Chicago, Ill						2									

Electric Vehicles

Atlantic	Atlantic Vehicle Co	Newark, N. J															
C.T	Commercial Truck Co	Philadelphia, Pa		½		1		2			3½		5				
Couple-Gear	Couple-Gear Freight Wheel Co	Grand Rapids, Mich											5				7
G.V	General Vehicle Co	Long Island City, L. I		½		1		2			3½		5				
Lansden	Lansden Co	Brooklyn, N. Y						2			3½		5		6		
Lansing	Lansing Co., Inc	Lansing, Mich							2½						6		
Urban	Kentucky Wagon Mfg. Co	Louisville, Ky		[redacted]													
Walker	Walker Vehicle Co	Chicago, Ill		½		1		2		3		4	5				T
Ward	Ward Motor Vehicle Co	Mt. Vernon, N. Y	½	½		1		2			3½		5				

Electric Industrial Trucks

Automatic	Automatic Transportation Co	Buffalo, N. Y						2									
Buda	Buda Co	Chicago, Ill															
Electromobile	Orenstein-Arthur Koppel Co	Koppel, Pa				1½	1½	2									T
Elwell-Parker	Elwell-Parker Electric Co	Cleveland, Ohio															
G.V	General Vehicle Co	Long Island City, N. Y															
Hoagland-Thayer	Hoagland-Thayer, Inc	Newark, N. J															
Hunt	C. W. Hunt Co	West New Brighton, N. Y															
Lansden	Lansden Co., Inc	Brooklyn, N. Y															
Lansing	Lansing Co., Inc	Lansing, Mich						2	2½				5				
Mercury	Mercury Mfg. Co	Chicago, Ill															
Transmobile	Cowan Electric Co	Holyoke, Mass						2									

Heavy type represents vehicles whose specifications are given in this issue.

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Buyers' Guide to 1918 Gasoline Trucks

Classified According to Load Capacity and Combined with Salient Features of Chassis

TRUCKS OF UNDER ½-TON CAPACITY

Name and Model	Chassis Price	Wheelbase, Inches	Tires	N.A.C.C. Horsepower	Electric System	Gearset Type	Final Drive
Briscoe.....24	$725	104	pneu....	16.92	s&l-2....	selec..	bevel.....
Buick.....	790	106	pneu....	18.21	s&l.....	selec..	bevel
Overland.....	635	104	pneu....	18.21	s,l&i-2...	selec..	bevel.....
Packet.....	300	100	pneu....	12.08	none....	fric...	dbl chn

TRUCKS OF ½-TON CAPACITY

Atlas.....18	$885*	106	pneu....	16.92	s,l&i-2...	selec..	sp-bev
Corliss.....A	800*	100	pneu....	15.64	.....	selec..	bevel
Crece.....17	825	108	p&s.....	16.92	.....	selec..	bevel
Ellsworth.....25-A	695	108	pneu....	16.92	s,l&i-2...	prog..	bevel
Gem.....	675	.....	pneu....	22.50	s&l.....	selec..	bevel
Kearns.....D	....	107	pneu....	16.92	s,l&i-2...	selec..	bevel
Lawson.....35	.....	112	pneu....	22.50	s&l.....	selec..	bevel
Lippard-Stewart.....MW	1,025	106	pneu....	16.92	s&l-2....	selec..	top worm
Overland.....83B	800	106	pneu....	27.20	s,l&i-2...	selec..	sp-bev
Rainier.....R-1	895	115	pneu....	16.92	s&l-2....	selec..	top worm
Rush.....D	895	105	pneu....	16.92	s&l.....	selec..	bevel
Studebaker.....	945	112	pneu....	24.22	s,l&i-2...	selec..	bevel
Vim.....21	765	108	pneu....	14.40	lighting..	selec.	bevel

TRUCKS OF ¾-TON CAPACITY

Clydesdale.....25	$1,025	124	pneu....	19.61	.....	selec..	bevel
Collier.....M	900	118	pneu....	16.92	.....	selec..	bevel
D-E.....J	975	108	pneu....	15.64	s&l.....	selec..	top worm
Denmo.....12	960	115	pneu....	16.92	s&l.....	selec..	int-gear
Dispatch.....	1,100	120	pneu....	22.50	s,l&i....	fric...	dbl chn
Forschler.....S	1,100	120	solid....	15.64	s,l&i....	selec..	top worm
Geneva.....	.....	96	solid....	22.18	.....	plan..	dbl chn
G.M.C.....16	1,395	132	pneu....	22.50	opt.....	selec..	bevel
Hahn.....	1,100	120*	solid....	19.61	.....	selec..	top worm
Higrade.....A-17	....	115	pneu....	16.92	s&l-2....	ind-c..	top worm
Hoover.....15-B	1,375	120	pneu....	19.61	none....	selec..	top worm
I.H.C.....H	1,450	115	solid....	19.61	s&l.....	selec..	int-gear
Kisselkar.....	1,185	135	pneu....	24.22	s&l-2*..	selec..	sp-bev
Lippard-Stewart.....W	1,750	125	opt.....	22.50	s&l*....	selec..	top worm
Little Giant.....15	1,500	138	p&s.....	19.61	.....	selec..	top worm
Menominee.....EW	1,425	124	cush....	22.50	.....	selec..	top worm
Modern.....30	1,800	132	solid....	22.50	none....	selec..	top worm
Old Hickory.....M	875	112	pneu....	16.92	s,l&i....	selec..	Sp-bev
Reo.....F	1,050	128	pneu....	27.20	s,l&i-2...	selec..	sp-bev
Republic.....Dsptch	895	110	p&s*....	16.92	starting..	selec..	int-gear
Republic.....Spec.	895	128	p&s*....	16.92	.....	selec..	int-gear

TRUCKS OF ¾-TON CAPACITY (Cont'd)

Selden.....G	$1,075	110	pneu....	15.64	s&l-2*...	selec..	top worm
Stewart.....6	845	110	pneu....	15.64	.....	selec..	int-gear
Tiffin.....A	1,190	110	pneu....	19.61	none....	selec..	int-gear
White.....GBBE	2,300	133½	pneu....	22.50	s&l*....	selec..	bevel
Wilcox.....V	1,300	120	pneu....	19.61	none....	selec..	worm

TRUCKS OF 1-TON CAPACITY

Acme.....B	$1,750	130	solid....	22.50	s,l&i-2...	ind-c..	top worm
Available.....1	1,775	132	solid....	22.50	none....	selec..	top worm
Bock.....A	1,080	124	solid....	19.61	ltg-2*...	selec..	int-gear
Bessemer.....G	1,250	124	solid....	19.61	none....	selec..	int-gear
Bethlehem.....A-1	1,245	126	solid*...	22.50	none....	selec..	int-gear
Brinton.....H	1,250	125	pneu*...	16.92	lighting..	selec..	top worm
Briscoe.....T-24	1,000	132	p&s.....	16.92	s&l-2....	selec..	dbl chn
Chase.....A	1,725	138	optional.	19.61	optional.	selec..	top worm
Commerce.....E	1,340	126	solid....	19.61	s,l&i-2...	selec..	int-gear
Concord.....B	1,750	130	p&s*....	19.61	s&l*....	selec..	top worm..
Continental.....FL	1,750	144	solid....	22.50	.....	selec..	top worm
Corbitt.....E	1,650	130	optional.	22.50	s,l&i-2*..	selec..	top worm
Dart.....E	1,800	130	solid....	22.50	s&l-2*...	selec..	top worm
D-E.....A	1,495	128	solid....	19.61	none....	selec..	top worm
Denby.....12	1,490	124	solid....	19.61	s&l.....	selec..	int-gear
Denmo.....10	1,490	124	solid*...	22.50	s&l.....	selec..	int-gear
Diamond-T.....J5	1,725	132	solid....	19.61	none....	selec..	top worm
Federal.....S	1,750	132	solid....	19.61	s&l-2*...	selec..	top worm
Ford.....	600	123	p&s.....	22.50	lighting..	plan..	top worm
Forschler.....A-0	1,815	138	solid....	19.61	.....	selec..	top worm
Gabriel.....C	1,800	136	pneu....	29.00	s&l-2*...	selec..	top worm
Garford.....75B	1,750	128	p&s.....	19.61	s,l&i-2*..	selec..	top worm
Gary.....F	....	130	solid....	22.50	lighting*	selec..	top worm
Globe.....A-1	1,375	132	solid....	19.61	none....	selec..	int-gear
G.M.C.....21	1,950	136	p&s*....	22.50	opt.....	selec..	top worm
Gramm-Bernstein.....W	1,900	124	solid....	22.50	none....	ind-c..	top worm
Hoover.....15-B	1,375	120	pneu....	19.61	.....	selec..	top worm
Independent.....F	1,385	128*	solid....	19.61	s&l.....	selec..	top worm
Indiana.....T	1,600	135	solid....	19.61	lightg*.	selec..	top worm
I.H.C.....F	1,750*	128*	solid*...	19.61	s&l*....	selec..	int-gear
Kisselkar.....	1,585	152	solid....	24.22	s&l-2*...	selec..	top worm
Kleiber.....AA	2,100	130	solid....	22.50	.....	selec..	top worm
Koehler.....K	1,150	129	solid....	19.61	.....	selec..	int gear
Lambert.....V-2	1,700	144	solid....	29.00	s&l.....	fric...	dbl chn
Lange.....C	1,950	136	solid....	27.20	none....	ind-c..	dbl chn
Larrabee.....M	1,800	130	solid....	22.50	none....	selec..	top worm
Lippard-Stewart.....HW	2,000	135	solid....	22.50	s&l*....	selec..	top worm
Mack.....AB	2,400	144	solid....	25.60	opt.....	selec..	top worm
Mack.....AB	2,400	144	solid....	25.60	opt.....	selec..	dbl chn
Maxfer.....	1,195	130	pneu*...	19.61	s&l.....	selec..	top worm
Maxwell.....	865	124	solid....	21.08	lighting..	selec..	top worm
Menominee.....FW	1,790	130	solid....	22.50	.....	selec..	top worm
Moreland.....	1,900	126	solid....	22.50	lightg*.	selec..	top worm
Nash.....2017	1,495	130	solid*...	22.50	s,l&i-2...	selec..	int-gear
Niles.....B	1,500	124	pneu....	19.61	.....	selec..	top worm
Oneida.....A	2,000	130	solid....	22.50	lighting..	ind-c..	top worm
Palmer.....	1,585	132	solid*...	22.50	.....	prog..	int-gear
Republic.....10	1,195	124	solid....	19.61	s&l*....	selec..	int-gear

ABBREVIATIONS—Types of Construction

*—with other options
cush—cushion
c & s—cushion and solid tires
dbl-chn—double chain drive
dbl-red—double reduction drive
f—drive to front wheels only
4—driving on all four wheels
fric—friction
ind-c—individual clutch, constant mesh
int-gear—internal gear
plan—planetary
pneu—pneumatic
p&s—pneumatic and solid
prog—progressive
selec—selective sliding gearset
sp-bev—spiral bevel
s, l & i—starting, lighting and ignition
s, l & i-2—2-unit starting, lighting and ignition system
s & l-2—2-unit starting and lighting system

Prices are exclusive of the 3 per cent. Government war tax

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TRUCKS OF 1-TON CAPACITY (Cont'd)

Name and Model	Chassis Price	Wheelbase, Inches	Tires	N.A.C.C. Horsepower	Electric System	Gearset Type	Final Drive
Packard.....1-E	$2,450	126*	c&s	25.60	s&l-2*...	selec..	top worm
Reya.....18	995	117	pneu....	22.50	s,l&i-2...	selec..	bevel
Royal.....	.....	124	solid....	16.92	.....	ind-c..	top worm
Sandow.....A	1,485	120	solid*...	19.61	.....	selec..	top worm
Selden.....TX	1,550	140	solid....	19.61	s&l-2*...	selec..	int-gear
Service.....220	1,500	137	opt.....	19.61	s&l-2*...	selec..	top worm
Signal.....F	1,875	144	solid....	22.50	none....	selec..	top worm
Studebaker.....	1,350	125	pneu....	24.22	s,l&i-2...	selec..	bevel
Superior.....A	1,500	124*	solid....	19.61	.....	selec..	int-gear
Taylor.....	1,750	134	solid....	19.61	.....	selec..	top worm
Tiffin.....AW	1,550	112	solid....	19.61	none....	selec..	top worm
Wichita.....A	1,750	110	solid....	19.61	.....	selec..	dbl chn
Wichita.....K	1,750	118	solid....	19.61	.....	selec..	top worm
Wilcox.....S	.....	128	opt.....	22.50	lightg*..	selec..	top worm
Wisconsin.....B	1,650	136	solid....	19.61	.....	selec..	top worm
Witt Will.....WD-18	2,000	120	solid*...	22.50	.....	selec..	top worm

TRUCKS OF 1½-TON CAPACITY

Name and Model	Chassis Price	Wheelbase, Inches	Tires	N.A.C.C. Horsepower	Electric System	Gearset Type	Final Drive
Acason.....B	$2,100	150	solid....	22.50	.....	selec..	top worm
Atterbury.....7R	2,275	140½	solid....	27.20	none....	selec..	top worm
Beck.....B	1,275	124	solid....	19.61	lightg-2*	selec..	int-gear
Brockway.....J3	2,050	140	solid....	22.50	none....	selec..	top worm
Chase.....C	2,025	149½	solid....	19.61	opt.....	selec..	top worm
Clydesdale.....45	2,100	146	solid....	27.20	none....	selec..	top worm
Continental.....HL	2,100	144	solid....	22.50	.....	selec..	top worm
Corbitt.....D	1,900	138	solid*...	22.50	s,l&i-2*..	selec..	top worm
D-E.....B	1,755	144	solid....	22.50	none....	selec..	top worm
Diamond-T.....J4	2,200	154	solid....	22.50	.....	selec..	top worm
Federal.....T	2,200	144	solid....	22.50	s,l&i-2*..	selec..	top worm
Forschler.....AX	2,200	138	solid....	19.61	.....	selec..	top worm
Fulton.....F2	1,420	136	solid....	19.61	opt.....	selec..	int-gear
Garford.....66B	2,100	142	solid....	27.50	s,l&i-2*..	selec..	top worm
Gary.....G	....	144	solid....	29.00	lightg*..	selec..	top worm
G.M.C.....31	2,350	130	solid....	22.50	opt.....	selec..	top worm
Gramm-Bernstein.....W	2,300	130	solid....	22.50	none....	ind-c..	top worm
Hahn.....	1,950	144*	solid....	27.20	.....	selec..	top worm
Hawkeye.....J	1,750	146	solid*...	22.50	s,l&i-2*..	selec..	int-gear
Horner.....1918	2,600	145	solid....	27.20	lighting..	selec..	top worm
Hurlburt.....1	2,350	136	solid....	22.50	lighting..	selec..	top worm
Kelly-Springfield.....K31	2,500	144	solid....	22.50	s&l-2*...	selec..	dbl-chn*
Kleiber.....A	2,500	140	solid....	27.20	.....	selec..	top worm
Lamson.....	1,850	150*	solid....	25.60	.....	ind-c..	top worm
Lane.....F	1,750	135	solid....	19.61	s,l&i-2...	selec..	top worm
Lange.....C	1,850	130	solid....	22.50	.....	ind-c..	dbl chn
Larrabee.....N	2,000	140	solid....	27.20	none....	selec..	top worm
Lippard-Stewart.....F	2,450	158	solid....	27.20	s&l*....	selec..	top worm
Maccar.....L	2,400	150	solid....	27.20	.....	selec..	top worm
Mack.....AB	2,800	162*	solid....	25.60	opt.....	selec..	top worm*
Manly.....30	2,050	156	solid....	22.50	s&l*....	selec..	top worm
Menominee.....H	2,050	144	solid....	22.50	.....	selec..	top worm
Moreland.....	2,500	106	solid....	27.20	opt.....	selec..	top worm
Nelson & LeMoon.....E	1,900	opt	solid....	22.50	s,l&i*...	selec..	top worm
New York.....M	2,200	144	solid....	27.20	.....	ind-c..	top worm
Old Reliable.....'	1,950	150*	solid....	22.50	lighting..	selec..	top worm
Oneida.....B	2,650	130	solid....	27.20	lighting..	ind-c..	top worm
Packard.....1½-E	2,800	126	c&s	25.60	s&l-2*...	selec..	top worm
Republic.....11	1,450	144	solid....	22.50	.....	selec..	int-gear
Sanford.....W-15	2,200	140	solid....	22.50	s,l&i-2...	selec..	top worm
Service.....230	2,200	150	solid....	25.60	s&l-2*...	selec..	top worm
Stewart.....9	1,750	140	solid....	22.50	—-2*...	selec..	int-gear
Sullivan.....F	2,150	129	solid....	22.50	.....	selec..	top worm
Taylor.....	2,200	142	solid....	22.50	.....	selec..	top worm
Tiffin.....GW	1,970	135	solid....	22.50	none....	selec..	top worm
Triangle.....A	....	144	solid....	22.50	.....	selec..	int-gear
Universal.....G	1,950	133	solid...	22.50	lighting..	selec..	top worm
White.....TBC	3,300	145½	p&s....	22.50	none....	selec..	dbl-red
White Hickory.....H	2,200	144	solid*...	22.50	.....	prog..	top worm
Wichita.....L	1,950	118	solid...	19.61	.....	selec..	top worm
Wilcox.....X	....	144	solid...	20.00	lightg*..	selec..	top worm

TRUCKS OF 2-TON CAPACITY

Name and Model	Chassis Price	Wheelbase, Inches	Tires	N.A.C.C. Horsepower	Electric System	Gearset Type	Final Drive
Acason.....H	$2,400	150	solid....	29.00	.....	selec..	top worm
Acme.....A	2,450	148	solid....	27.20	lightg*..	ind-c..	top worm
Armleder.....HW	2,750	148	solid....	27.20	lightg*..	selec..	top worm
Atterbury.....7C	2,675	153½	solid....	27.20	.....	selec..	top worm
Autocar.....XXI-F	1,815	97	opt.....	18.10	lightg*..	prog..	dbl-red
Available.....2	2,450	144	solid....	27.20	none....	selec..	top worm
Beck.....C	1,750	144	solid....	29.00	lightg-2*	selec..	int-gear
Bessemer.....D	2,550	146	solid....	27.20	none....	selec..	top worm
Bessemer.....J	2,200	158	solid....	27.20	none....	selec..	int-gear
Bethlehem.....B-1	1,775	144	solid....	25.60	none....	selec..	int-gear
Blair.....C	2,850	144	solid....	29.00	none....	ind-c..	top worm
Bourne Magnetic.....VM	3,300	150	solid....	25.60	s,l&i-2...	selec..	top worm
Brockway.....K3	2,450	148	solid....	27.20	none....	selec..	top worm
Burford.....O3	2,250	144*	solid....	22.50	lighting..	selec..	int-gear
Clydesdale.....65	2,475	163	solid....	27.20	none....	selec..	top worm
Columbia.....E-T	1,950	144	solid....	27.20	lightg*..	selec..	int-gear
Concord.....A	2,400	145	solid....	29.00	s&l*....	selec..	top worm
Continental.....J	2,300	146	solid....	27.20	.....	selec..	top worm
Corbitt.....C	2,650	148	solid....	27.20	none....	selec..	top worm
Dart.....CC-4	2,470	150	solid....	29.00	s,l&i*...	selec..	top worm
Dayton.....H	2,650	.....	solid....	29.00	.....	selec..	dbl chn
Denby.....13	2,025	144	solid....	22.50	s&l.....	selec..	int-gear
DeKalb.....E-2	2,100	134	solid....	27.20	none....	selec..	top worm
Diamond-T.....P	2,475	154	solid....	27.20	.....	selec..	top worm
Derris.....L	2,285	144	solid....	29.00	s&l-2*...	selec..	top worm
Pageol.....	2,750	144	solid....	25.60	.....	ind-c..	top worm
Pargo.....P	2,200	146	solid....	22.50	s,l&i-2*..	selec..	int-gear
Federal.....U	2,450	156	solid....	22.50	s,l&i-2*..	selec..	top worm
Forschler.....BO	2,475	138	solid....	27.20	.....	selec..	top worm
Gabriel.....E	2,500	156	opt.....	29.00	s&l-2*...	selec..	top worm
Garford.....70B	2,600	142	solid....	29.00	s,l&i-2*..	selec..	top worm
Gary.....H	....	156	solid....	29.00	lightg*..	selec..	top worm
G.A.Schacht.....	2,750	138	solid....	29.00	none....	selec..	top worm
Gersix.....C	2,500	150*	solid....	33.75	s&l.....	ind-c..	top worm
G.M.C.....41	2,690	144*	solid....	27.20	opt.....	selec..	top worm
Gramm-Bernstein.....W-2	2,600	146	solid....	22.50	none....	ind-c..	top worm
Hall.....	2,350	144	solid....	27.20	lightg*..	selec..	top worm
Hendrickson.....G	.....	.....	solid....	29.00	.....	.....	top worm
Horner.....1918	2,750	145	solid....	15.64	lighting..	selec..	top worm
Hurlburt.....2	3,300	148	solid....	29.00	none....	selec..	top worm
I.H.C.....G	2,500	135½	solid*...	25.60	s&l*....	selec..	int-gear
Indiana.....D	2,350	150	solid....	27.20	.....	selec..	top worm
Independent.....G	1,850	144	solid....	27.20	.....	selec..	top worm
Kisselkar.....	2,275	168	solid....	29.00	s&l2*...	selec..	top worm
Kleiber.....BB	2,750	140	solid....	27.20	.....	selec..	top worm
Lange.....B	2,650	136	solid....	27.20	none....	ind-c..	dbl chn
Lippard-Stewart.....G	2,700	165	solid....	27.20	s&l*....	selec..	top worm
Lumb.....C	1,900	148	opt.....	29.00	lighting..	selec..	int-gear
Mack.....AB	3,000	162	solid....	25.60	opt.....	selec..	top worm*
Manly.....40	2,250	156	solid....	22.50	s&l*....	selec..	top worm
Master.....M	1,990	144*	solid....	29.00	....	selec..	int-gear
Menominee.....D	2,475	144	solid*...	27.20	....	selec..	top worm
Muskegon.....20	2,200	144	solid....	27.20	lightg*..	selec..	int-gear
Nash Quad.....4017	3,250	124	solid....	29.00	s&l-2*...	selec..	int-gear-4
Nelson & LeMoon.....E2	2,250	opt..	solid....	27.20	s,l&i*...	selec..	top worm
Netco.....D	2,500	144	solid....	27.20	none....	selec..	top worm
New York.....N	2,600	144	solid....	27.20	.....	ind-c..	top worm
Niles.....E	2,400	140	solid....	27.20	.....	selec..	top worm
Noble.....NW-2	2,300	148	solid....	27.20	opt.....	.....	top worm
Old Reliable.....	2,450	150	solid....	25.60	lighting..	selec..	top worm
Oneida.....C	3,000	144	solid....	27.20	lighting..	ind-c..	top worm
Packard.....2-E	3,200	144	solid....	25.60	s&l-2*...	selec..	top worm
Palmer.....	2,275	144	solid....	27.20	.....	prog..	top worm
Peerless.....TC-2	3,000	145	solid....	32.40	lightg*..	selec..	top worm
Pierce-Arrow.....	3,300	150	solid....	25.60	s,l&i-2*..	selec..	top worm
Reo.....J	1,800	146	solid....	27.20	s,l&i-2*..	selec..	dbl chn
Republic.....A	1,885	144	solid....	27.20	.....	selec..	int-gear
Rowe.....CDW	2,800	142	solid....	25.60	.....	selec..	top worm
Sandow.....B	2,450	165	solid....	27.20	.....	selec..	top worm
Selden.....B	.....	162	solid....	27.20	s&l-2*...	selec..	top worm
Service.....240	2,500	160	solid....	29.00	s&l-2*...	selec..	top worm
Signal.....H	2,375	144	solid....	27.20	none....	selec..	top worm
Standard.....70	2,500	140	solid....	27.20	none....	selec..	top worm
Steele.....C	2,250	115*	solid....	27.20	lighting..	ind-c..	dbl chn
Stegeman.....	2,600	150	solid....	29.45	s&l-2....	selec..	top worm
Stewart.....7	2,195	156	solid....	27.20	.....	selec..	int-gear
Sullivan.....E	2,600	150	solid....	27.20	.....	selec..	top worm
Superior.....C	2,000	144	solid....	22.50	.....	selec..	int-gear

ABBREVIATIONS—Types of Construction

*—with other options
cush—cushion
c & s—cushion and solid tires
dbl-chn—double chain drive
dbl-red—double reduction drive
f—drive to front wheels only
4—driving on all four wheels
fric—friction
ind-c—individual clutch, constant mesh
int-gear—internal gear
plan—planetary
pneu—pneumatic
p&s—pneumatic and solid
prog—progressive
selec—selective sliding gearset
sp-bev—spiral bevel
s, l & i—starting, lighting and ignition
s, l & i-2—2-unit starting, lighting and ignition system
s & l-2—2-unit starting and lighting system

Prices are exclusive of the 3 per cent Government war tax

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TRUCKS OF 2-TON CAPACITY (Cont'd)

Name and Model	Chassis Price	Wheelbase, Inches	Tires	N.A.C.C. Horsepower	Electric System	Gearset Type	Final Drive
Thomas.....40	$3,000	150	solid....	29.00	lighting..	selec..	top worm
Universal.....D	2,800	132	solid....	29.00	lighting..	selec..	dbl chn
U.S.....E	2,650	144	solid....	27.20	lightg*..	ind-c..	dbl chn
U.S.....H	2,950	144	solid....	27.20	lightg*..	ind-c..	top worm
Velie.....2S-A	2,750	150	solid....	27.20	s??	selec..	top worm
Wichita.....B	2,250	118	solid....	19.61	s&l*....	selec..	dbl chn
Wilcox.....Q	4,000	150	solid....	32.40	lightg*..	selec..	top worm
Wilson	2,550	144	solid....	27.20	opt.....	selec..	top worm
Winther.....47	2,800	150	solid....	25.60	opt.....	prog..	int-gear

TRUCKS OF 2½-TON CAPACITY

Brinton.....F	$2,400	140	solid....	27.20	none....	selec..	top worm
Chase.....B	2,475	160	solid....	27.20	opt.....	selec..	top worm
Corbitt.....B	2,900	148	solid....	27.20	none....	selec..	top worm
D-E.....C	2,365	150	solid....	29.00	none....	selec..	top worm
DeKalb.....E	2,450	136	solid....	27.20	none....	selec..	top worm
Deane	3,000	150	solid....	29.00	.....	selec..	dbl chn
Gary.....HU	.....	162	solid....	29.00	lightg*..	selec..	top worm
G.A.Schacht	3,000	156	solid....	29.00	none....	selec..	top worm
Gramm-Bernstein.....W	3,150	156	solid....	29.00	opt.....	ind-c..	top worm
Harvey.....W.F.A.	2,500	150	solid....	29.00	s,l&i....	selec..	top worm
Kelly-Springfield.....3S	3,000	144	solid....	22.50	s&l-2*...	selec..	top worm*
Kleiber.....B	3,200	150	solid....	32.40	lighting..	selec..	top worm
Lamson	2,450	160*	solid....	25.60	lighting..	ind-c..	top worm
Lane.....B	2,500	150	solid....	29.45	s,l&i-2...	selec..	top worm
Lange.....B	2,450	136	solid....	27.20	.....	ind-c..	dbl chn
Larrabee.....O	2,700	154	solid....	27.20	none....	selec..	top worm
Maccar.....H	2,950	162	solid....	32.40	none....	selec..	top worm
Manly.....50	2,600	168	solid....	25.60	s&l*....	selec..	top worm
Moreland	3,000	144	solid....	32.40	none....	selec..	top worm
Old Reliable	2,750	.....	solid....	29.00	.....	selec..	dbl chn
Reanoe	3,250	144	solid....	27.20	lighting..	selec..	top worm
Rowe.....CDW	3,000	164	solid....	25.60	.....	selec..	top worm
Royal	.....	132*	solid....	25.60	.....	ind-c..	top worm
Sanford.....W-25	2,800	156	solid....	27.20	none....	selec..	top worm
Selden.....BR	.....	162	solid....	27.20	s&l-2*...	selec..	int-gear
Signal.....J	2,835	150	solid....	27.20	none....	selec..	top worm
Sterling	2,950	156	solid....	29.00	none....	selec..	top worm
Taylor	2,900	145	solid....	27.20	.....	selec..	top worm
Tiffin.....MC	2,500	140	solid....	27.20	none....	selec..	dbl chn
Tiffin.....MW	2,700	140	solid....	27.20	none....	selec..	top worm
Union.....B	1,990	152	solid....	25.60	lightig*..	selec..	int-gear
Wichita.....R	2,500	144	solid....	22.50	.....	selec..	top worm
Wisconsin.....C	2,500	156	solid....	25.60	.....	selec..	top worm
Witt Will.....WD-18	2,500	144	solid*...	27.20	none....	selec..	top worm

TRUCKS OF 3-TON CAPACITY

A&B.....3T	$4,500	144	solid....	42.76	.....	elec...	int-gear-f
Beech Creek.....3A	3,850	132	solid....	29.00	.....	selec..	bevel
Blair.....D	3,250	144	solid....	29.00	none....	ind-c..	top worm
Chase.....X	2,800	160	solid....	27.20	opt.....	selec..	top worm
Denby.....15	2,525	144	solid....	22.50	s&l.....	selec..	int-gear
F.W.D.....B	4,000	124	solid....	36.15	s&l*....	ind-c..	bevel-4
Gary.....K	.....	162	solid....	32.40	lightg*..	selec..	top worm
Horner	3,550	145	solid....	32.40	lighting..	selec..	top worm
Lapeer.....A	1,500	90	solid....	19.61	.....	selec..	int-gear
Manly.....60	3,000	168	solid....	29.00	s&l*....	selec..	top worm
Nelson & LeMoon....E-3	2,950	Opt.	solid....	32.40	s,l&i*...	selec..	top worm
Old Reliable	3,250	150	solid....	29.00	lighting..	selec..	top worm
Peerless.....TC-3	3,700	151	solid....	32.40	lightg*..	selec..	dbl chn
Pull-More	3,400	153	solid....	32.40	.....	selec..	dbl chn

TRUCKS OF 3-TON CAPACITY (Cont'd)

Name and Model	Chassis Price	Wheelbase, Inches	Tires	N.A.C.C. Horsepower	Electric System	Gearset Type	Final Drive
Riker.....B	$3,900	150	solid....	29.00	s&l*....	selec..	top worm
Schleicher	3,500	150*	solid....	29.00	.....	selec..	dbl chn
Steele.....B	3,000	127*	solid....	40.00	lighting..	ind-c..	dbl chn
Stegeman	3,000	160	solid....	29.45	s&l-2....	selec..	top worm
United F.W.D.....B	4,000	130	solid....	34.28	lightg-2*	ind-c..	bevel-4
White.....TAD	4,100	163	solid....	22.50	.....	selec..	dbl chn
Winther.....67	3,000	150	solid....	25.60	opt.....	prog..	int-gear

TRUCKS OF 3½-TON CAPACITY

Acason.....L	$3,000	166	solid....	29.00	.....	selec..	top worm
Acme.....C	3,250	168	solid....	32.40	lightg*.	ind-c..	top worm
American.....30	3,450	158	solid....	32.40	opt.....	selec..	top worm
Armleder.....KW	3,600	156	solid....	32.40	lightg*..	selec..	top worm
Atterbury.....7D	3,575	167½	solid....	32.40	.....	selec..	top worm
Available.....3	3,450	156	solid....	32.40	none....	selec..	top worm
Bessemer.....E	3,450	150	solid....	32.40	none....	selec..	top worm
Bourne Magnetic.....XM	4,000	160	solid....	29.00	s,l&i-2...	selec..	top worm
Brockway.....R	3,200	164	solid....	32.40	none....	selec..	top worm
Burford.....D3	3,600	175*	solid....	32.40	lighting..	selec..	top worm
Chase.....O	3,600	175	solid....	29.00*	opt.....	selec..	top worm
Clydesdale.....90	3,400	180	solid....	32.40	none....	selec..	top worm
Continental.....M	3,300	168*	solid....	32.40	.....	selec..	top worm
Corbitt.....A	3,800	168	solid....	32.40	none....	ind-c..	top worm
Couple-Gear.....HC	5,600	144*	solid....	44.20	lighting..	selec..	bevel
Dart.....L	3,400	160	solid....	32.40	opt.....	selec..	top worm
Dayton	3,400	.....	solid....	29.00	.....	selec..	top worm
Dayton.....K	3,400	.....	.....	36.15	.....	selec..	dbl chn
Diamond-T.....N	3,750	170	solid....	32.40	.....	selec..	top worm
Duplex.....D	3,600	130*	solid....	29.00	s&l.....	ind-c..	int-gear
Federal.....W	3,150	156	solid....	29.00	s&l-2*...	selec..	top worm
Gabriel.....F	3,250	168	solid*...	32.40	s&l-2*...	selec..	top worm
Garford.....77B	3,700	128	solid....	29.00	s,l&i-2*..	selec..	top worm
G.A.Schacht	3,400	168	solid....	29.00	none....	selec..	top worm
G.M.C.....71	3,750*	187*	solid....	32.40	.....	selec..	top worm
Gramm-Bernstein.....W	3,800	158	solid....	32.40	s,l&i-2*..	ind-c..	top worm
Hahn	2,900	148*	solid....	32.40	.....	selec..	top worm*
Hall	3,250	144	solid....	32.40	lightg*...	selec..	top worm
Harrison.....C	.....	.....	solid....	32.40	.....	selec..	dbl chn
Harrison.....F	.....	.....	solid....	32.40	.....	selec..	dbl chn
Harvey.....WHA	3,250	160	solid....	32.40	s,l&i....	selec..	top worm
Hendrickson.....H	3,000	.....	solid....	32.40	lightg*..	prog..	top worm
Hurlburt.....3	3,850	146	solid....	32.40	none....	selec..	top worm
Indiana.....R	3,000	156	solid....	29.00	none....	selec..	top worm
Kelly-Springfield.....K40	3,850	150	solid....	32.40	s&l-2*...	selec..	dbl chn
King	2,800	120	solid....	32.40	none....	ind-c..	dbl chn
Kisselkar	3,150	168	solid....	29.00	s&l*....	selec..	top worm
Kleiber.....C	3,850	160	solid....	32.40	lighting..	selec..	top worm
Lamson	3,150	170*	solid....	36.15	lighting..	ind-c..	top worm
Lane.....C	3,250	160	solid....	33.75	s,l&i-2...	selec..	top worm
Larrabee.....R	3,400	154	solid....	32.40	none....	selec.	top worm
Maccar.....M	3,600	174	solid....	32.40	none....	selec..	top worm
Mack.....AC	4,250	180	solid....	40.00	opt.....	selec..	dbl chn
Menominee.....G	3,275	160	solid....	32.40	none....	selec..	top worm
Oneida.....D	3,600	160	solid....	32.40	lighting..	ind-c..	top worm
Republic.....T	2,750	165	solid....	29.00	.....	selec.	int-gear
Rowe.....DEW	3,400	158*	solid....	29.00	.....	ind-c..	top worm
Royal	.....	158*	solid....	29.00	.....	ind-c..	top worm
Sanford.....W35	3,600	174	solid....	32.40	none....	selec..	top worm
Selden.....C	.....	180	solid....	32.40	s&l-2*...	selec..	top worm
Service.....270	3,300	171	solid....	29.00	s&l-2*...	selec..	top worm
Service.....275	3,600	171	solid....	32.40	s&l-2*...	selec..	top worm
Standard.....65	3,200	156	solid....	32.40	none....	selec..	top worm
Sterling	3,900	162	solid....	29.00	lighting..	ind-c..	top worm
Taylor	3,650	156	solid....	32.40	.....	selec..	top worm
Thomas.....70	3,500	150	solid....	29.00	lighting..	selec..	top worm
Tiffin.....PW	3,400	156	solid....	32.40	none....	selec..	top worm
U.S.....D	3,350	162	solid....	32.40	lightg*..	ind-c..	dbl chn
U.S.....J	3,650	162	solid....	32.40	lightg*..	ind-c..	top worm
Universal.....L	.....	156	solid....	29.00	lighting..	selec..	dbl chn
Velie.....26A	3,600	172½	solid....	32.40	.....	selec..	top worm
Ware	4,000	140	solid....	42.20	lightg*..	selec..	bevel-4
Wichita.....O	3,450	165	solid....	32.40	lightg*..	selec..	top worm
Wilcox.....P	2,900	154	solid....	29.00	lightg*..	selec..	top worm
Wilson	3,250	156	solid....	32.40	opt.....	selec..	top worm

ABBREVIATIONS—Types of Construction

*—with other options
cush—cushion
c & s—cushion and solid tires
dbl-chn—double chain drive
dbl-red—double reduction drive
f—drive to front wheels only
4—driving on all four wheels
fric—friction
ind-c—individual clutch, constant mesh
int-gear—internal gear
plan—planetary
pneu—pneumatic
p&s—pneumatic and solid
prog—progressive
selec—selective sliding gearset
sp-bev—spiral bevel
s, l & i—starting, lighting and ignition
s, l & 1-2—2-unit starting, lighting and ignition system
s & 1-2—2-unit starting and lighting system

Prices are exclusive of the 3 per cent Government war tax

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TRUCKS OF 4-TON CAPACITY

Name and Model	Chassis Price	Wheelbase, Inches	Tires	N.A.C.C. Horsepower	Electric System	Gearset Type	Final Drive
Kelly-Springfield.....K45	$4,000	150	solid....	32.40	s&l-2*...	selec..	dbl chn
Moreland.....	3,800	162	solid....	36.15	none....	selec..	top worm
Old Reliable.....	3,750	.....	solid....	36.15	lighting..	selec..	top worm
Old Reliable.....	3,750	.....	solid....	36.15	lighting..	selec..	dbl chn
Packard.....3-E	3,900	156	solid....	32.40	s&l-2*...	selec..	top worm
Peerless.....TC-4	4,000	151	solid....	32.40	light-2*..	selec..	dbl chn
Riker.....BB	4,050	150	solid....	29.00	s&l*....	selec..	top worm
Signal.....M	3,825	168	solid....	32.40	none....	selec..	top worm
Steele.....BA	3,500	127*	solid....	40.00	lighting..	ind-c..	dbl chn
Stegeman.....	3,800	160	solid....	33.75	s&l-2....	selec..	top worm
Winther.....87	4,000	156	solid....	29.00	opt.....	prog..	int-gear

TRUCKS OF 5-TON CAPACITY

Name and Model	Chassis Price	Wheelbase, Inches	Tires	N.A.C.C. Horsepower	Electric System	Gearset Type	Final Drive
A&B.....5T	$4,750	144	solid....	42.76	.....	elec...	int-gear-f
Acason.....M	4,200	172	solid....	36.15	.....	selec..	top worm
Available.....	4,500	156	solid....	32.40	none....	selec..	top worm
Blair.....F	4,250	144	solid....	32.40	none....	ind-c..	top worm
Clydesdale.....120	4,200	180	solid....	32.40	.....	selec..	top worm
Corbitt.....AA	4,200	168	solid....	32.40	none....	ind-c..	top worm
Couple-Gear.....AC	6,400	144*	solid....	44.20	lighting..	elec...	bevel
Dayton.....M	4,500	.....	solid....	44.20	.....	selec..	dbl chn
Diamond-T.....R	4,600	170	solid....	32.40	.....	selec..	top worm
Federal.....X	4,200	156	solid....	29.00	opt.....	selec..	top worm
Garford.....68	4,500	128	solid....	36.15	s,l&i-2*..	selec..	dnl-chb
G.A.Schacht.....	4,400	168	solid....	29.00	none....	selec..	top worm
G.M.C.....101	4,350*	187*	solid....	32.40	lightg*..	selec..	top worm
Gramm-Bernstein.....W5	4,700	168	solid....	36.15	s,l&i-2*..	ind-c..	top worm
Hall.....	4,200*	144	solid....	32.40	lightg*..	selec..	top worm*
Harvey.....WK-A	4,000	160	solid....	32.40	s,l&i....	selec..	top worm
Horner.....1918	4,750	156	solid....	44.20	lighting..	selec..	top worm
Hurlburt.....	4,600	156	solid....	33.75	none....	selec..	top worm
Indiana.....L	4,000	168	solid....	36.15	.....	selec..	top worm
Kelly-Springfield.....K50	4,600	150	solid....	32.40	s&l-2*...	selec..	dbl chn
Kleiber.....D	4,900	170	solid....	44.20	lightg*..	selec..	top worm
Lamson.....	4,150	180*	solid....	41.62	s&l.....	ind-c..	top worm
Lombard.....	.....	.....	steel....	79.50	none....	selec..	creeper
Moreland.....	4,500	168	solid....	36.15	none....	selec..	top worm
Nelson LeMoon.....E5	3,750	opt.	solid....	32.40	s,l&i*...	selec..	top worm
Old Reliable.....	4,500	150*	solid....	36.15	lighting..	selec..	dbl chn
Peerless.....TC	4,500	151	solid....	32.40	lightg*..	selec..	dbl chn
Packard.....4E	4,375	156	solid....	32.40	s&l-2*...	selec..	top worm
Pierce-Arrow.....	5,000	168	solid....	38.25	s&l*....	selec..	top worm
Republic.....V	4,250	160	solid....	32.40	none....	selec..	nt-gear
Rowe.....GW	4,500	171	solid....	46.15	.....	selec..	top worm
Royal.....	.....	168*	solid....	36.15	.....	ind-c..	top worm
Schleicher.....	4,500	150*	solid....	40.00	.....	selec..	dbl chn
Selden.....D	.....	169	solid....	36.15	s&l-2*...	selec..	top worm
Service.....300	4,300	171½	solid....	32.40	s&l-2*...	selec..	top worm
Signal.....R	4,475	180	solid....	32.40	none....	selec..	top worm
Standard.....85	.....	156	solid....	32.40	none....	selec..	top worm
Steele.....A	4,000	127*	solid....	40.00	lighting..	ind-c..	dbl chn
Stegeman.....	4,500	168	solid....	38.40	s&l-2....	selec..	top worm
Sterling.....	4,750	168	solid....	36.15	lighting..	ind-c..	top worm
Taylor.....	4,600	160	solid....	44.20	.....	selec..	top worm
Tiffin.....RW	4,550	168	solid....	33.75	s,l&i-2...	selec..	top worm
Titan.....	5,000	156	solid....	32.40	lighting..	ind-c..	int-gear
U.S.....K	4,550	168	solid....	36.15	lightg*..	ind-c..	top worm
Walter.....F	5,000	156	solid*...	36.15	s,l&i....	selec..	int-gear-4
White.....TCD	5,000	169	solid....	29.00	.....	selec..	dbl chn
Wichita.....Q	4,000	165	solid....	32.40	s&l-2....	selec..	top worm
Wilcox.....W	.....	162	solid....	36.15	lightg*..	selec..	top worm
Wilson.....	.....	156	solid....	32.40	opt.....	selec..	top worm
Winther.....107	4,600	162	solid....	36.15	s&l.....	prog..	int-gear

TRUCKS OF 5½-TON CAPACITY

Name and Model	Chassis Price	Wheelbase, Inches	Tires	N.A.C.C. Horsepower	Electric System	Gearset Type	Final Drive
Maccar.....U	$4,500	186	solid....	32.40	.....	selec..	top worm
Mack.....AC	4,750	180	solid....	40.00	opt.....	selec..	dbl chn

TRUCKS OF 6-TON CAPACITY

Name and Model	Chassis Price	Wheelbase, Inches	Tires	N.A.C.C. Horsepower	Electric System	Gearset Type	Final Drive
Deane.....	$4,750	178	solid....	36.15	.....	selec..	dbl chn
Garford.....69	4,700	128	solid....	42.20	s,l&i-2*..	selec..	dbl chn
Garford-Read.....	5,650	128	steel....	42.20	.....	selec..	dbl chn
G.V. Mercedes.....	.....	192½	solid....	29.00	.....	selec..	int-gear
Kelly-Springfield.....K60	4,750	150	solid....	32.40	s&l-2*...	selec..	dbl chn
Packard.....5E	4,900	156	solid....	40.00	s&l-2*...	selec..	top worm
Peerless.....TC-6	5,000	151	solid....	32.40	lightg*..	selec..	dbl chn
Royal.....	.....	158*	solid....	42.20	.....	ind-c..	top worm
Tiffin.....SW	4,650	168	solid....	33.75	s,l&i-2...	selec..	top worm
Winther.....127	5,000	162	solid....	42.20	s&l.....	prog..	int-gear

TRUCKS OF 7-TON CAPACITY

Name and Model	Chassis Price	Wheelbase, Inches	Tires	N.A.C.C. Horsepower	Electric System	Gearset Type	Final Drive
Hurlburt.....	$5,500	156	solid....	33.75	none....	selec..	top worm
Old Reliable.....	5,000	150	solid....	41.62	lighting..	selec..	dbl chn
Packard.....6E	5,150	156	solid....	40.00	s&l-2*...	selec..	top worm
Royal.....	.....	158*	solid....	44.20	.....	ind-c..	dbl chn
Stegeman.....	5,000	168	solid....	38.40	s&l-2....	selec..	top worm
Sterling.....	5,250	168	solid....	36.15	lightg...	ind-c..	dbl chn
Western.....	4,600	146	solid....	36.15	lightg*..	selec..	dbl chn

TRUCKS OF 7½-TON CAPACITY

Name and Model	Chassis Price	Wheelbase, Inches	Tires	N.A.C.C. Horsepower	Electric System	Gearset Type	Final Drive
Dayton.....E	$4,950	.....	solid....	44.20	.....	selec..	dbl chn
Mack.....AC	5,000	180	solid....	40.00	opt.....	selec..	dbl chn

TRACTORS

Name and Model	Chassis Price	Wheelbase, Inches	Tires	N.A.C.C. Horsepower	Electric System	Gearset Type	Final Drive
Acason.....	$2,500	114	solid....	29.00	.....	selec..	top worm
Acason.....	3,800	130	solid....	36.15	.....	selec..	top worm
Barber.....3	2,500	84	solid....	29.00	none....	selec..	top worm
Harvey.....HT	4,000	125	solid....	32.40	s,l&i....	selec..	top worm
Highway.....A	.....	93	solid....	22.50	none....	selec..	int-gear
Knox.....35	4,500	108½	solid....	40.00	s&l-2....	selec..	dbl chn
Knox Towing.....36	5,000	108½	solid....	40.00	s&l-2....	selec..	dbl chn
Koehler.....KT	1,550	106	solid....	19.61	.....	selec..	int-gear
Lapeer.....C	1,900	90	solid....	19.61	none....	selec..	int-gear
Mack.....AB	3,100	120	solid....	25.60	opt.....	selec..	dbl chn
Mack.....AC	4,250	119	solid....	40.00	opt.....	selec..	dbl chn
Mack.....AC	4,750	119	solid....	40.00	opt.....	selec..	dbl chn
Mack.....AC	5,000	119	solid....	40.00	opt.....	selec..	dbl chn
Rennec.....	3,250	116	solid....	2.720	lighting..	selec..	top worm
Transport.....T	2,750	80	solid....	22.50	none....	selec..	top worm
Transport.....T	2,750	80	solid....	19.60	.....	selec	op worm
Watson.....	4,050	80	solid....	32 40	none....	selec..	top worm

ABBREVIATIONS—Types of Construction

*—with other options
cush—cushion
c & s—cushion and solid tires
dbl-chn—double chain drive
dbl-red—double reduction drive
f—drive to front wheels only
4—driving on all four wheels
fric—friction
ind-c—individual clutch, constant mesh
int-gear—internal gear
plan—planetary
pneu—pneumatic
p&s—pneumatic and solid
prog—progressive
selec—selective sliding gearset
sp-bev—spiral bevel
s, l & i—starting, lighting and ignition
s, l & i-2—2-unit starting, lighting and ignition system
s & l-2—2-unit starting and lighting system

Prices are exclusive of the 3 per cent Government war tax

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Technical Specifications of Gaso

Details of 475 Gasoline, Electric and Steam Motor Truck Chassis of Types of Engines, Transmissions, Controls

Name and Model	Tons Capacity	Chassis Price	Wheelbase, Inches	FRAME			TIRES			ENGINE																GOVERNOR	
							Size in Ins.							COOLING			IGNITION			ELEC. SYSTEM							
				Make	Material	Type	Kind	Front	Rear	Wheels	Make	No. Cyl. Bore and Stroke—N.A.C.C., Hp.	Cylinders Cast	Water Circ.	Radiator Make	Radiator Core and Case	Type	Make	Spark Advance	Type	Make	Extra Cost	Type	Make	Drive
A. & B.	3T	$4,500	144	own..	rol-c.	s-flx.	s....	48x3½d	48x3½d	wd..	own..	4-5.17x4¾-42.8	2	gear...	Bush.	fin-sht...	dual.-	Bosch.	hand-	none..	none..	....	none.	none....	.....
A. & B.	5T	4,750	144	own..	rol-c.	s-flx..	s....	48x3½d	48x5d	wd..	own..	4.-517x4¾-42.8	2	gear...	Bush.	fin-sht...	dual.-	Bosch.	hand-	none..	none..	....	none.	none....	.....
Acason	B	1½	2,100	150	.....	p-stl.	.....	s....	34x3½s	36x5s	wd..	Wau.	4-3⅞x5½-22.5	2	cent...	own..	cel-cst..	sing..	Eismn	hand-	.....	.....	.....	cent-	Wau....	motor.
Acason	H	2	2,400	150	.....	p-stl.	.....	s....	34x4s	36x7*	wd..	Wau.	4-4¼x5½-28.9	2	cent...	own..	cel-cst..	sing..	Eismn	hand-	.....	.....	.....	cent-	Wau....	motor.
Acason	L	3½	3,000	166	.....	p-stl.	.....	s....	34x5s	36x5d	wd..	Wau.	4-4¼x5½-28.9	2	cent...	own..	cel-cst..	sing..	Eismn	hand-	.....	.....	.....	cent-	Wau....	motor.
Acason	M	5	4,200	172	.....	p-stl.	.....	s....	36x6s	40x6d*	wd..	Wau.	4-4¾x6½-36.1	2	cent...	own..	cel-cst..	sing..	Eismn	hand-	.....	.....	.....	cent-	Wau....	motor.
Acason	Tractor	.....	2,500	114	.....	.....	.....	s....	34x4s	36x7s*	wd..	Wau.	4-4¼x5½-28.9	2	cent...	own..	cel-cst..	sing..	Eismn	hand-	.....	.....	.....	cent-	Wau....	motor.
Acason	Tractor	.....	3,800	130	.....	p-stl.	.....	s....	34x5s	36x6d	wd..	Wau	4-4¾x6¾-36.1	2	cent...	own..	cel-cst..	sing..	Eismn	hand-	.....	.....	.....	cent-	Wau....	motor.
Acme	B	1	1,750	130	.....	p-stl.	s-flx..	s....	34x3s	34x4s	wd..	Con..	4-3½x5 -22.5	4	ther...	Long.	fin-sht...	sing..	Eismn	hand-	.....	G&D--	100	cent-	Pierce...	motor.
Acme	A	2	2,450	148	.....	p-stl.	s-flx..	s....	36x4s	36x6s	wd..	Con..	4-4¼x5½-27.2	4	cent...	Long.	fin-sht...	sing..	Eismn	hand-	ltg....	G&D--	75	cent-	Pierce...	motor.
Acme	C	3½	3,250	168	.....	rol-c.	s-flx..	s....	36x5s	40x5d	wd..	Con..	4-4¼x5½-32.4	2	cent...	Long.	fin-cst..	sing..	Eismn	hand-	ltg....	G&D--	75	cent-	Pierce...	motor.
American	30	3½	3,450	158	Dtrt..	p-stl.	rigid.	s....	36x5s	36x5d	wd..	Con..	4-4¼x5½-32.4	2	cent...	Long.	fin-cst..	sing..	Eismn	hand-	ltg....	.....	.....	cent-	Pierce...	motor.
Armleder	HW	2	2,750	148	Smth--	p-stl.	flex..	s....	36x4s	36x7s	wd..	Con..	4-4¼x5½-27.2	4	cent...	Long.	fin-cst..	sing..	Eismn	hand-	opt...	opt....	.....	cent-	Pierce...	shaft..
Armleder	KW	3½	3,600	156	.....	rol-i.	flex..	s....	36x5s	36x5d	wd..	Con..	4-4¼x5½-32.4	2	cent...	Long.	fin-cst..	sing..	Eismn	hand-	ltg....	opt....	.....	cent-	Pierce...	shaft..
Atlas	18	¾	885	106	Prsh..	p-stl.	flex..	pnu..	31x4	31x4	wd.	Lyc..	4-3½x5 -16.9	4	ther...	.....	cel-sht..	sing.	.....	.....	.....	Remy.	.....	.....	.....	.....
Atterbury	7R	1½	2,275	140	.....	p-stl.	flex..	s....	36x3½s	36x5s	wd..	Con..	4-4¼x5½-27.2	4	cent...	own..	fin-cst..	sing..	Eismn	fixed	none..	none..	.....	cent-	Pierce...	motor.
Atterbury	7C	2	2,675	153	.....	p-stl.	flex..	s....	36x3½s	36x4d	wd.	Con..	4-4¼x5½-27.2	4	cent...	own..	fin-cst..	sing..	Eismn	fixed	none..	none..	.....	cent-	Pierce...	motor.
Atterbury	7D	3½	3,575	167	.....	p-stl.	flex..	s....	36x5s	40x5d	wd.	Con..	4-4¼x5½-32.4	2	cent...	own..	fin-cst..	sing..	Eismn	hand.	none..	none..	.....	cent-	Pierce...	motor.
Autocar	XXI-F	2	1,815	97	.....	p-stl.	.....	opt..	34x4s	34x5s	wd..	own..	2-4¾x4½-18.1	1	cent...	own.	fin-sht..	sing..	Bosch*	fix...	ltg....	opt....	.....	.....	.....	.....
Available	1	1,775	132	.....	rol-c	s-flx..	s....	36x3½s	36x5s	wd.	Con..	4-3½x5 -22.5	4	ther...	Chgo	cel-sht..	sing..	Bosch.	fix...	none..	none..	.....	none.	none....	.....
Available	2	2,450	144	.....	rol-c	s-flx.	s....	36x4s	36x7s	wd.	Con..	4-4¼x5½-27.2	4	cent...	Chgo	cel-sht..	sing..	Bosch.	fix...	none..	none..	.....	none.	none....	none..
Available	3	2½	3,450	156	.....	rol-c	s-flx..	s....	36x5s	40x5d	wd.	Con..	4-4¼x5½-32.4	2	cent...	Chgo	cel-cst..	sing..	Bosch.	fix...	none..	none..	.....	cent-	Pierce...	motor.
Available	5	4,500	156	.....	rol-c	s-flx..	s....	36x6s	40x6d	wd.	Con..	4-4¼x5½-32.4	2	cent...	Chgo	cel-cst..	sing..	Bosch.	fix...	none..	none..	.....	cent-	Pierce...	motor.
Avery	B	2	2,700	128	.....	.....	.....	s....	36x4	36x3½d	.....	.....	4-4½x5 -36.1	1	cent...	.....	.....	.....	Eismn	.....	.....	.....	.....	cent-	.....	motor.
Avery	B	3	3,200	128	.....	.....	.....	s....	38x5	38x4d	.....	.....	4-4½x5 -36.1	1	cent...	.....	.....	.....	Eismn	.....	.....	.....	.....	cent-	.....	motor.
Avery	A	3	2,500	140	.....	.....	.....	s....	38x5	38x4d	wd.	.....	4-4½x5 -36.1	1	cent...	.....	.....	.....	.....	.....	.....	.....	.....	cent-	.....	motor.
Barber Tractor	3	6	2,500	84	own..	rol-c	rigid.	s....	34x3½s	34x7s	wd..	Buda	4-4½x5½-28.9	4	cent...	own..	sq-t-ci...	dual.-	Bosch.	hand-	none..	none..	.....	none.	none....	.....
Beck	A	1	1,080	124	P&B..	p-stl	rigid.	s....	34x3s	34x4s	wd..	Con..	4-3½x5 -19.6	2	ther...	Idl...	cel-p-s..	dual.-	Bosch.	fix...	ltg2..	Vesta.	80	cent-	Pierce...	motor.
Beck	B	1½	1,275	124	P&B..	p-stl	rigid.	s....	34x3s	34x5s	wd.	Con..	4-3½x5½-19.6	4	ther...	Idl...	cel-p-s..	dual.-	Bosch.	fix...	ltg....	Vesta.	80	cent-	Pierce...	motor.
Beck	C	2	1,750	144	P&B..	p-stl.	.....	s....	34x4s	34x6s	wd.	Con..	4-4¼x5½-28.9	2	gear...	Idl...	cel-p-s..	dual.-	Bosch.	fix...	ltg....	Vesta.	80	cent-	Pierce...	motor.
Beech Creek	3A	3	3,850	132	Prsh.	.....	.....	s....	36x6	36x6	.....	Wau.	4-4¼x5½-28.9	2	cent...	.....	.....	.....	.....	.....	.....	.....	.....	cent-	Wau....	motor.
Bessemer	G	1	1,250	124	Savg.	p-stl.	rigid.	s....	34x3s	34x4s	wd.	Con..	4-3½x5 -19.6	4	ther...	Idl...	cel-sht..	sing..	Spltf..	hand-	none..	none..	.....	none.	none....	.....
Bessemer	D	2	2,550	146	Savg.	p-stl.	rigid.	s....	36x4s	36x4d	wd.	Con..	4-4¼x5½-27.2	4	pump.	Idl...	cel-cst..	sing..	Spltf..	hand-	none..	none..	.....	cent-	Pierce...	motor.
Bessemer	J	2	2,200	158	Savg.	p-stl.	rigid.	s....	36x4s	36x4d	wd.	Con..	4-4¼x5½-27.2	4	cent...	Idl...	cel-cst..	sing.	Spltf..	hand-	none..	none..	.....	cent-	Pierce...	motor.
Bessemer	E	3½	3,450	150	Savg.	p-stl.	rigid.	s....	36x5s	36x5d	wd.	Con..	4-4¼x5½-32.4	2	cent...	Idl...	cel-cst..	sing.	Spltf..	hand-	none..	none..	.....	cent-	Pierce...	motor.
Bethlehem	A1	1½	1,245	126	Dtrt..	p-stl	s-flx..	opt..	34x3s	34x4s	wd.	GBS.	4-3⅞x4½-22.5	4	ther...	Fed..	z-p-stl..	sing..	Blng..	hand-	none..	none..	.....	cent-	Pierce...	shaft..
Bethlehem	B1	2½	1,775	144	Dtrt..	p-stl	s-flx..	s....	34x4s	34x6s	wd.	N-A.	4-4 x4½-23.5	2	ther...	Fed..	z-p-stl..	sing..	Blng..	hand-	none..	none..	.....	cent-	Pierce...	shaft..
Blair	C	2	2,850	144	.....	p-stl	flex..	s....	34x4s	34x3½d	wd.	Wau.	4-4¼x5½-38.9	2	cent...	Idl...	z-t-sht..	sing..	Eismn	auto.	none..	none..	.....	cent-	Wau....	motor.
Blair	D	3	3,250	144	.....	p-stl	flex..	s....	36x5s	36x5d	wd.	Wau.	4-4¼x5½-28.9	2	cent...	Idl...	z-t-sht..	sing..	Eismn	auto.	none..	none..	.....	cent-	Wau....	motor.
Blair	F	5	4,250	144	.....	p-stl	flex..	s....	36x6s	36x6s	wd.	Wau.	4-4¼x6½-32.4	2	cent...	Idl...	z-t-sht..	sing..	Eismn	auto.	none..	none..	.....	cent-	Wau....	motor.
Bourne	VM	2	3,300	150	Prsh.	p-stl	flex..	s....	36x4s	36x4d	wd.	Her..	4-4 x5½-25.6	4	cent...	G&O.	cel-cst..	sing..	Eismn	fix...	sl&i2.	Entz..	none	cent-	Simplex..	motor.
Bourne	XM	3½	4,000	160	Prsh.	p-stl	flex..	s....	36x5s	36x5d	wd.	Her.	4-4½x5½-28.9	4	cent...	G&O.	cel-cst..	sing..	Eismn	fix...	sl&i2.	Entz..	none	cent.	Simplex..	motor.
Brinton	H	1	1,250	125	.....	.....	.....	pnu..	33x4½s	33x4½s	wd..	Wis.	4-3½x5 -16.9	4	ther...	.....	fin-sht..	sing..	.....	fix...	ltg....	.....	.....	none	none....	none..
Brinton	F	2½	2,400	140	.....	.....	.....	s....	36x4*	36x6*	wd.	Con..	4-4½x5½-27.2	4	cent...	.....	fin-sht..	sing..	Bosch.	fix...	.....	.....	none	cent-	.....	motor.
Briscoe	24	¼	725	104	own ..	p-stl	flex.	.....	31x4s	31x4s	wd.	own..	4-3⅞x5½-16 2	4	ther.	Har..	sq-t-ps..	dual.-	Conn--	hand-	.....	Aut-L-	none	.none	none....	none..
Briscoe	T-24	1	1,000	132	own..	p-stl*	s-flx..	pnu..	31x4s	34x3½s	wd..	own..	4-3⅞x5½-16.2	4	ther...	S-W..	zz-t-ps..	sing..	Conn-	hand-	s&l2..	Aut-L-	.....	none	none....	none..
Brockway	J3	1½	2,050	140	Prsh	p-stl	flex	s....	36x3½s	36x5s	wd.	Con..	4-3½x5½-22.5	4	cent...	Bush.	fin-cst..	sing.	Bosch.	fix...	none.	none..	.....	suct.	Mnrch..	motor.
Brockway	K3	2	2,450	148	Prsh	p-stl	flex	s....	36x4s	36x7s	wd.	Con..	4-4¼x5½-27.2	4	cent...	Bush.	fin-cst..	sing.	Bosch.	fix...	none.	none..	.....	suct.	Mnrch..	motor.
Brockway	R	3½	3,200	164	Prsh	p-stl	flex..	s....	36x5s	36x5d	wd.	Con.	4-4¼x5½-32.4	4	cent...	Bush.	fin-cst..	sing.	Simms	fix...	none.	none..	.....	suct.	Mnrch..	motor.
Buick		¼	790	106	.....	.....	.....	.....	31x4	31x4	.....	own.	4-3½x4½-18.2	4	pump	.....	.....	sing.	Delco	hand-	s&l..	Delco.	.....	.....	.....	.....
Burford	O3	2	2,250	144*	.....	.....	.....	s....	36x3½	36x3½d	....	Buda	4-3½x5½-22.5	4	pump	.....	.....	sing.	Eismn	fix...	ltg....	.....	.....	none.	none....	.....
Burford	D3	3½	3,600	175*	.....	.....	.....	s....	38x5	38x5d	....	Wau	4-4½x6½-32.4	4	pump.	.....	.....	sing.	Eismn	fix...	ltg....	.....	.....	cent-	Wau....	.....
Chase	A	1	1,725	138	.....	p-stl	s-flx.	opt..	36x3½s	36x5s	wd..	Wau.	4-3½x5½-19.6	4	cent...	Bush.	fin-sht..	sing..	Bosch.	fix...	opt..	opt....	.....	cent-	Mnrch..	motor.
Chase	C	1½	2,025	149	.....	p-stl	s-flx..	s....	36x3½s	36x6s	wd.	Wau.	4-3½x5½-19.6	4	cent...	Bush.	fin-sht..	sing..	Bosch.	fix...	opt..	opt....	.....	suct..	Mnrch..	motor.
Chase	B	2½	2,475	160	.....	p-stl	s-flx..	s....	36x4s	36x4d	c-s..	Bud--	4-4¼x5½-27.2	4	cent...	Bush.	fin-cst..	sing..	Bosch.	fix...	opt..	opt....	.....	suct..	Mnrch..	motor.
Chase	X	3	2,800	160	.....	p-stl	s-flx..	s....	36x4s	36x5d	wd.	Bud--	4-4¼x5½-27.2	4	cent...	Bush.	fin-cst..	sing..	Bosch.	fix...	opt..	opt....	.....	suct..	Mnrch..	motor.
Chase	O	3½	3,600	175	.....	p-stl	s-flx..	s....	36x5s	36x5d	c-s.	Con*.	4-4¼x5½-32.4*	2*	cent...	Bush.	fin-cst..	sing..	Bosch.	fix...	opt..	opt....	.....	suct..	Mnrch..	motor.
Clydesdale	25	½		124	.....	p-stl.	s-flx..	pnu.	34x4½s	34x4½s	wd.	Con.	4-3½x5 -19.6	4	ther...	own.	p-t-c-s..	sing..	Bosch.	fix...	.....	.....	.....	.....	.....	.....
Clydesdale	45	1½		146	.....	p-stl	s-flx..	s....	36x3½s	36x5s	wd.	Con.	4-4¼x5½-27.2	4	cent...	own.	p-t-c-s..	sing..	Bosch.	hand-	none..	none..	.....	cent-	own....	motor.
Clydesdale	65	2		163	.....	p-stl	s-flx.	s....	36x4s	36x6s*	wd.	Con.	4-4¼x5½-27.2	4	cent...	own.	p-t-c-s..	sing..	Bosch.	hand-	none..	none..	.....	cent-	own....	motor.
Clydesdale	99	3½		180	.....	p-stl	s-flx.	s....	36x5s	36x5d	wd.	Con.	4-4¼x5½-32.4	2	cent...	own.	p-t-c-s..	sing..	Bosch.	hand-	none..	none..	.....	cent-	own....	motor.
Clydesdale	120	5		180	.....	p-stl	s-flx.	s....	36x6s	40x6d	wd.	Con.	4-4¼x5½-32.4	2	cent...	own.	p-t-c-s..	sing..	Bosch.	hand-	none..	none..	.....	cent-	own....	motor.
Collier	M	¾	900	118	Savg.	.....	.....	pnu.	32x4	32x4	.....	Lyc.	4-3½x5 -16.9	4	.....	.....	.....	.....	Conn-	hand-	.....	.....	.....	.....	.....	.....

ABBREVIATIONS—Types of Construction

*Other Options
amid—amidships
auto—automatic
c—center
c&l—center and left
c-s—cast steel
cent—centrifugal
cel-cst—cellular core cast case
cel-sht—cellular core sheet case
cylinders cast, 2 in pairs
cylinders cast, 4 in block
cylinders cast, 3 in threes
cylinders cast, 1 singly
d—dual
d-d—dry disk
d-p—dry plate
d-rd—double reduction
elec—electric
ext-dst—external drive-shaft
ext-f-s—external front wheels.
ext-jst—external jack-shaft
ext-r-w—external rear wheel
fab—fabric
fin-sht—finned tube core sheet case
flx—fixed
flex—flexible
fric—friction
grav—gravity
gset—gearset
hyd—hydraulic
ind-c—individual clutch
int-dst—internal drive-shaft
int-f-w—internal front wheels
in-g—internal gear
in-g-4—internal gear drive on 4 wheels
int-r-w—internal rear wheel
jst—unit with jackshaft
l—left
ltg—lighting
metl—metal
mtr—unit with motor
opt—optional
pist—piston pump
plan—planetary
pnu—pneumatic
pres—pressure
prog—progressive sliding gear
p-stl—pressed steel
r—right
r-a—unit with rear axle
ring-cst—ring core cast case
rol-c—rolled channel
rol-i—rolled I-beam
r-rd—radius rods
selec—selective sliding gear
s-flx—semi-flexible
s & l—starting and lighting
s, l & i—starting, lighting and ignition
s, l & i 2—starting, lighting and ignition two-unit
sing—single
s—solid
spgs—springs
sq-t-sht—square tube core sheet case
stk—stock
sub-f—sub-frame
ther—thermo-syphon
tor-a—torque arm
tor-t—torsion tube
vacm—vacuum
wd—wood
w-d—multiple disk in oil
worm—top worm
w-p—wet plate
zz-t-sht—zig-zag tube core sheet case

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line Commercial Vehicles for 1918

Produced by 166 American Manufacturers, With Full Particulars and Equipment and Names of Principal Parts

ENGINE						TRANSMISSION										BRAKES		CONTROL			UNIVERSALS		
SPEED		FUEL SYS.		CLUTCH		GEARSET				FINAL DRIVE								STEERING GEAR					
Motor in R.p.m.	Truck in M.p.h.	Carbureter, Make	Fuel Feed	Type	Make	Type	Make	Placed	Speeds	Type	Axle Make	Total Gear Reduction	Propulsion Taken By	Torque Taken By	Springs, Make	Foot	Hand	Placed	Make	Levers	Type	Make	Name and Model
.....	.....	Schblr..	grav..	none..	none...	elec....	none...	amid..	2	in-g...	own....	.....	r-rd....	r-rd....	Perf...	ext-r-w.	ext-f-w.	r....	Gem..	r....	metl...	Franck.	A. & B.....3T
.....	.....	Schblr..	grav..	none..	none...	elec....	none...	amid..	2	in-g...	own....	.....	r-rd....	r-rd....	Perf...	ext-r-w.	ext-f-w.	r....	Gem..	r....	metl..	Franck.	A. & B.....5T
1,500	18	Stmbg..	vacm..	d-p...	B-Beck.	selec...	Covert.	mtr...	3	worm	Timkn.	7.75	spgs...	spgs...	Dtrt...	int-r-w.	int-r-w.	r....	Ross..	c....	metl...	Blood..	Acason.....B
1,200	15	Schblr..	vacm..	d-d...	Muncie	selec...	Muncie	mtr...	4	worm	Timkn.	7.75	spgs...	spgs...	Dtrt...	int-r-w.	int-r-w.	r....	Ross..	c....	metl...	Blood..	Acason.....H
1,200	12	Schblr..	vacm..	d-d...	Muncie	selec...	Muncie	mtr...	4	worm	Timkn.	10.3	spgs...	spgs...	Dtrt...	int-r-w.	int.....	r....	Ross..	c....	metl...	Blood..	Acason.....L
1,000	10	Stmbg..	vacm..	d-p...	B-Beck.	selec...	Cotta..	mtr...	3	worm	Timkn	11.6	spgs ..	spgs...	Dtrt...	int-r-w.	int-r-w	r....	Ross..	c....	metl...	Blood..	Acason.....M
1,200	15	Schblr..	vacm..	d-d...	Muncie	selec...	Muncie	mtr...	4	worm	Timkn.	9.25	spgs...	spgs...	Dtrt...	int-r-w.	int-r-w	r....	Ross..	c....	metl...	Blood..	Acason.....Tractor
1,000	10	Stmbg..	vacm..	d-p...	B-Beck.	selec...	Cotta..	mtr...	3	worm	Timkn.	10.3	spgs...	spgs...	Dtrt...	int-r-w.	int-r-w.	r....	Ross..	c....	metl...	Blood..	Acason.....Tractor
1,700	22	Rayfld..	vacm..	d-p...	B-Beck.	mesh..	Cotta..	mtr...	3	worm	Timkn.	7.75	spgs...	spgs...	Dtrt...	int-r-w.	int-r-w.	l....	Ross..	c....	.....	.....	Acme.....B
1,300	17	Rayfld..	vacm..	d-p...	B-Beck.	mesh..	Cotta..	mtr...	3	worm	Timkn.	9.25	spgs...	spgs...	Dtrt...	int-r-w.	int-r-w.	l....	Ross..	c....	.....	.....	Acme.....A
1,200	14	Rayfld..	vacm..	d-p...	B-Beck.	.....	Cotta..	amid..	3	worm	Timkn.	12.00	r-rd....	spgs...	Dtrt...	int-r-w.	int-r-w.	l....	Ross..	c....	.....	.....	Acme.....C
1,143	14	Stmbg..	grav..	d-p...	Detlaf.	selec...	Covert.	amid..	4	worm	Shel...	8.75	spgs...	spgs...	Perf...	int-r-w.	int-r-w.	l....	Lavn..	c....	metl...	M-Eva.	American.....30
1,200	15	Schblr..	grav..	d-p...	B-Beck.	selec...	Covert.	mtr...	3	worm	Timkn.	8.50	r-rd....	spgs...	Mthr...	int-r-w.	int-r-w.	l....	Ross..	c....	metl...	Spicer.	Armleder.....HW
1,000	12	Schblr..	grav..	d-d...	B-Lipe.	selec...	B-Lipe.	mtr...	3	worm	Timkn.	8.75	r-rd....	spgs...	Mthr...	int-r-w.	ext-d-s.	l....	Gem..	c....	metl...	Spicer.	Armleder.....KW
600	.....	Carter..	.....	.....	B-Beck.	selec...	.....	mtr...	3	bevl..	Hess...	4.75	spgs...	spgs...	.....	ext-r-w.	int-r-w.	.....	Lavn..	....	metl..	Arvac..	Atlas.....18
1,200	15	Zenith..	grav..	d-d...	B-Lipe.	selec...	B-Lipe.	mtr...	4	worm	Timkn.	8.5	spgs...	spgs...	.....	int-r-w.	int-r-w.	r....	Gem..	r....	.....	.....	Atterbury.....7R
1,200	15	Zenith..	grav..	d-d...	B-Lipe.	selec...	B-Lipe.	mtr...	4	worm	Timkn.	8.5	spgs...	spgs...	.....	int-r-w.	int-r-w.	r....	Gem..	r....	.....	.....	Atterbury.....7C
1,125	13	Zenith..	grav..	d-d...	B-Lipe.	selec...	B-Lipe.	mtr...	4	worm	Timkn.	10.3	spgs...	spgs...	.....	int-r-w.	int-r-w.	r....	Gem..	r....	.....	.....	Atterbury.....7D
.....	.....	Stmbg..	grav..	d-p...	own....	prog...	own....	amid..	3	d-rd...	own....	7.15	spgs...	spgs...	.....	int-r-w.	ext-r-w.	r....	own..	r....	.....	.....	Autocar.....XXI-F
.....	.....	Stmbg..	grav..	d-d...	B-Lipe.	selec...	B-Lipe.	mtr...	3	worm	Timkn.	7.00	r-rd....	spgs...	Tut....	int-r-w.	int-r-w.	l....	Ross..	c....	.....	.....	Available.....1
.....	.....	Stmbg..	grav..	d-d...	B-Lipe.	selec...	B-Lipe.	mtr...	3	worm	Timkn.	7.75	r-rd....	spgs...	Tut....	int-r-w.	int-r-w.	l....	Ross..	c....	.....	.....	Available.....2
1,214	14	Stmbg..	grav..	d-d...	B-Lipe.	selec...	B-Lipe.	mtr...	3	worm	Timkn.	10.30	r-rd....	spgs...	Tut....	int-r-w.	int-r-w.	l....	Ross..	c....	.....	.....	Available.....3
1,175	12	Stmbg..	grav..	d-d...	B-Lipe.	selec...	B-Lipe.	mtr...	3	worm	Timkn.	11.7	r-rd....	spgs...	Tut....	int-r-w.	int-r-w.	l....	Ross..	c....	.....	.....	Available.....5
1,200	14½	Rayfld..	.....	d-d...	.....	selec...	.....	jst....	3	chn...	.....	3.5	r-rd....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Avery.....B
1,200	13	Rayfld..	.....	d-p...	.....	selec...	.....	jst....	3	chn...	.....	3.5	r-rd....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Avery.....B
1,200	12	Rayfld..	.....	d-d...	.....	selec...	.....	jst....	3	chn...	.....	3.5	r-rd....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Avery.....A
.....	.....	Stmbg..	grav..	d-p...	own....	selec...	Fuller.	mtr...	3	worm	own....	.....	spgs...	spgs...	own....	int-r-w.	ext-r-w.	l....	Ross..	c....	.....	.....	Barber Tractor.....3
2,000	18	Stmbg..	grav..	d-d...	Fuller.	selec...	Fuller.	mtr...	3	in-g...	Clark..	.....	.....	.....	Hig....	ext-r-w.	int-r-w.	l....	Lavn..	c....	metl...	Blood..	Beck.....A
2,000	18	Stmbg..	grav..	d-d...	Fuller.	selec...	Fuller.	.....	3	in-g...	Clark..	6.00	.....	.....	Hig....	ext-r-w.	int-r-w.	l....	Lavn..	c....	metl...	Blood..	Beck.....B
1,500	12	Stmbg..	grav..	d-d...	Fuller.	selec...	Fuller.	mtr...	3	in-g...	Clark..	9.00	.....	.....	Hig....	ext-r-w.	in-tr-w.	l....	Lavn..	c....	metl...	Blood..	Beck.....C
1,000	12	King....	.....	d-p...	B-Beck.	selec...	own....	amid..	6	bevl...	own....	8.0	r-rd....	spgs...	.....	ext-r-w.	ext-sht.	.....	own...	.....	metl...	.....	Beech Creek.....3A
-.-	.....	Zenith--	grav..	d-d ...	Fuller.	selec...	Fuller.	mtr...	3	in-g...	Torb...	7.0	spgs...	spgs...	Perf...	ext-r-w.	int-r-w.	l....	Ross..	r	metl...	Blood..	Bessemer.....G
1,100	15	Rayfld.	grav..	cone..	Hartfd.	selec...	B-Lipe.	amid..	3	worm	Timkn.	8.0	spgs...	spgs...	Perf...	int-r-w.	ext-....	l....	Ross..	r....	metl...	Spicer.	Bessemer.....D
1,100	15	Rayfld.	grav..	cone..	Hartfd.	selec...	B-Lipe.	amid..	3	in-g...	Torb...	8.0	r-rd....	spgs...	Perf...	ext-r-w.	int-f-w.	l....	Ross..	r....	metl...	Blood..	Bessemer.....J
1,160	12	Rayfld.	grav..	cone..	Hartfd.	selec...	B-Lipe.	amid..	3	worm	Timkn.	10.3	r-rd....	spgs...	Perf...	int-r-w.	ext-r-w.	l....	Ross..	r....	metl...	Spicer.	Bessemer.....E
1,300	18	Schblr..	grav..	d-p...	GBS....	selec...	Dtrt...	mtr...	3	in-g...	Russl..	7.4	spgs...	spgs...	Shel...	ext-r-w.	int-r-w.	l....	Lavn..	c....	metl...	Univ...	Bethlehem.....A1
1,230	15	Schblr.	grav..	d-d...	Dtrt...	selec...	Dtrt...	mtr...	3	in-g...	Russl..	8.3	spgs...	spgs...	Shel...	ext-r-w.	int-r-w.	l....	Lavn..	c....	metl...	Univ...	Bethelehem.....B1
1,060	14	Zenith--	grav..	cone..	own....	mesh..	Cotta..	amid..	3	worm	Key-H.	7.67	r-rd....	s-fr....	Shel...	int-r-w.	ext-d-s.	r....	Lavn..	r....	.....	.....	Blair.....C
1,000	12	Zenith--	grav..	cone..	own....	mesh..	Cotta..	amid..	3	worm	Key-H.	8.67	r-rd....	s-fr....	Shel...	int-r-w.	ext-d-s.	r....	Lavn..	r....	.....	.....	Blair.....D
900	10	Zenith--	grav..	cone..	own....	mesh..	Cotta..	amid..	3	worm	Key-H.	9.33	r-rd....	s-fr....	Shel...	int-r-w.	ext-....	r....	Lavn..	r....	.....	.....	Blair.....F
1,400	15	Zenith--	grav..	elec...	.....	elec...	.....	elec...	.....	worm	Timkn	.....	r-rd....	spgs...	Mthr...	int-r-w.	int-r-w.	l....	own...	l....	metl...	Blood..	Bourne.....VM
1,350	12	Zenith--	grav..	elec...	.....	elec...	.....	elec...	.....	worm	Timkn	.....	r-rd....	spgs...	Mthr...	int-r-w.	int-r-w.	l....	Ross..	l....	metl	Blood..	Bourne.....XM
-.-	.....	.....	pres..	d-d...	.....	selec...	.....	mtr...	3	worm	.....	6.2	spgs...	spgs...	.....	int-r-w.	int-f-w.	l....	.....	c....	.....	.....	Brinton.....H
-.-	.....	.....	grav..	d-d...	.....	selec...	.....	mtr...	3	worm	.....	7.75	spgs...	spgs...	.....	int-r-w.	int-r-w.	l....	.....	c....	.....	.....	Brinton.....A
-.-	.....	Buick..	grav..	cone..	own....	selec...	own....	r-ax...	3	bev...	own....	4.25	tor-a...	tor-a...	.....	int-r-w.	ext-r-w.	l....	own...	r....	metl...	own....	Briscoe.....24
-.-	.....	Buick..	grav..	cone..	own....	selec...	own....	j-st...	3	chn...	own....	9.0	r-rd....	.....	.....	int-r-w.	ext-j-s.	l....	own...	c....	metl..	own....	Briscoe.....T-24
1,200	15	Scheblr.	grav..	cone..	Hart....	selec...	B-Lipe.	amid..	3	worm	Shel...	8.66	spgs...	spgs...	Merl...	int-r-w.	int-r-w.	l....	Lavn.	c....	metl...	Spicer.	Brockway.....J3
1,200	15	Schblr.	grav..	cone..	Hart....	selec...	B-Lipe.	amid..	3	worm	Timkn	8.5	r-rd....	spgs...	Merl...	int-r-w.	int-r-w.	l....	Lavn.	c....	metl...	Spicer.	Brockway.....K3
1,100	12	Schblr.	grav..	d-d...	B-Lipe.	selec...	B-Lipe.	amid..	3	worm	Timkn.	10.5	r-rd....	spgs...	Merl...	int-r-w.	int-r-w.	l....	Lavn.	c....	metl...	Spicer.	Brockway.....R
.....	.....	Marvel.	vacm..	d-d...	own...	selec...	own...	mtr...	.....	bevl..	Timkn.	4.0	.....	.....	.....	int-r-w.	ext-r-w.	.....	.....	.....	.....	.....	Buick.....
1,200	15	Zenith..	grav..	cone..	Warner	selec...	Warner	mtr...	3	in-g...	own....	8.5	spgs...	spgs...	.....	exts-ht.	ext-r-w.	.....	Ross..	.....	.....	.....	Burford.....O3
1,000	13	Zenith..	vacm..	d-d...	B-Lipe.	selec...	B-Lipe.	amid..	4	worm	Shel...	13.1	r-rd....	spgs...	.....	int-f-w.	int-r-w.	.....	Ross..	.....	.....	.....	Burford.....D3
1,200	18	Stmbg..	grav..	d-d...	B-Lipe.	selec...	B-Lipe.	mtr...	3	worm	Shel...	7.8	spgs...	spgs...	Perf...	int-r-w.	int-r-w.	l....	Lavn.	c....	.....	.....	Chase.....A
1,000	16	Stmbg..	grav..	d-p...	B-Beck.	selec...	Cotta..	mtr...	3	worm	Shel...	8.66	spgs...	spgs...	Perf...	int-r-w.	ext-r-w.	l....	Lavn.	c....	.....	.....	Chase.....C
1,000	14	Stmbg..	grav..	d-d...	B-Lipe.	selec...	B-Lipe.	mtr...	3	worm	Shel...	8.66	spgs...	spgs...	Perf...	int-r-w.	ext-r-w.	l....	Lavn.	c....	.....	.....	Chase.....B
1,000	12	Stmbg..	grav..	d-d...	B-Lipe.	selec...	B-Lipe.	mtr...	4	worm	Shel...	9.25	spgs...	spgs...	Perf...	int-r-w.	int-r-w.	l....	Lavn.	c....	.....	.....	Chase.....X
1,000	12	Stmbg..	grav..	d-d...	B-Lipe.	selec...	B-Lipe.	mtr...	4	worm	Shel...	8.75	spgs...	spgs...	Perf...	ext-r-w.	ext-r-w.	l....	Lavn.	c....	.....	.....	Chase.....O
.....	.....	Zenith..	grav..	cone..	Dtrt...	selec...	Dtrt...	mtr...	3	bevl..	Slsby...	5.83	spgs...	tor-a...	Hess...	int-r-w.	ext-r-w.	r....	Ross..	c....	.....	.....	Clydesdale.....25
1,120	15	Zenith..	grav..	disk...	B-Lipe.	selec...	B-Lipe.	mtr...	4	worm	Timkn.	7.75	spgs...	spgs...	Perf...	int-r-w.	int-r-w.	r....	Ross..	c....	.....	.....	Clydesdale.....45
1,115	14	Zenith..	grav..	disk...	B-Lipe.	selec...	B-Lipe.	amid..	4	worm	Timkn.	8.5	r-rd....	spgs...	Perf...	int-r-w.	int-r-w.	r....	Ross..	r....	.....	.....	Clydesdale.....65
1,175	12	Zenith..	grav..	disk...	B-Lipe.	selec...	B-Lipe.	amid..	4	worm	Timkn.	10.3	r-rd....	spgs...	Perf...	int-r-w.	int-r-w.	r....	Ross..	r....	.....	.....	Clydesdale.....90
1,160	10	Zenith..	grav..	disk...	B-Lipe.	selec...	B-Lipe.	amid..	4	worm	Timkn.	13.66	r-rd....	spgs...	Perf...	int-r-w.	int-r-w.	r....	Ross..	r....	.....	.....	Clydesdale.....120
.....	35	Zenith..	grav..	d-p...	Mech..	selec...	.....	mtr...	3	bevl...	Slsby...	6.0	spgs...	tor-a...	.....	int-r-w.	ext-r-w.	.....	own...	.....	fab....	Norwk.	Collier.....M

ABBREVIATIONS—Makers of Parts

Other Options
-K—Atwater-Kent
ut-L—Auto-Lite
-Beck—Borg & Beck
-Lipe—Brown-Lipe
Bing—Berling
rm—Bremer
ud—Buda
an—Candler
elfr—Celfor
hgo—Chicago
on—Continental
onn—Connecticut
trt—Detroit
Dynt—Dyneto
Elsmn—Eisemann
E-M—English & Mersick
Eur—Eureka
Fed—Fedders
Franck—Francke
G&O—G & O Mfg. Co.
GBS—Golden, Belknap & Swartz
G-C—Garden City
Gem—Gemmer
Har—Harrison
Hart—Hartford
Hays—Hayes
Hig—Higgins
H-Shaw—Hele-Shaw
H-S—Herschell-Spillman
Idl—Ideal
Iron—Iron City
Jacx—Jackson-Church-Wilcox
Jhnson—Johnson
Kal—Kalamazoo
K-B—Kinsler-Bennett
Key-H—Keystone-Hindley
Lavn—Lavigne
LeR—LeRoi
Lgt—Light
Ligt—Liggett
Lyc—Lycoming
M'C—McCord
Merl—Merrill
Mil—Milwaukee
Mnrch—Monarch
Mthr—Mather
Natl—National
N. A.—North American
P & B—Parish & Bingham
Perf—Perfection
Prsh—Parish
R-T—Rome-Turney
Rayfld—Rayfield
Rowl—Wm. Harvey Rowland
Russl—Russel
Rut—Rutenber
Salsby—Salisbury
S-A—Savage Arms
Schblr—Schebler
Shel—Sheldon
Shkspr—Shakespeare
Smth—A. O. Smith
S-P—Spring-Perch
Spltf—Splitdorf
Stewrt—Stewart
Stmbg—Stromberg
Sundmn—Sunderman
S-W—Sparks-Withington
Ther—Thermoid
Timkn—Timken
Torb—Torbenson
Tut—Tuthill
Univ—Universal Machine Co.
Wau—Waukesha
Wilcx—Wilcox
Wis—Wisconsin

Prices are exclusive of the 3 per cent Government war tax

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Technical Specifications of Gasoline

Name and Model	Tons Capacity	Chassis Price	Wheelbase, Inches	FRAME: Make	FRAME: Material	FRAME: Type	TIRES: Kind	TIRES: Sizes in Ins. Front	TIRES: Sizes in Ins. Rear	Wheels	ENGINE: Make	ENGINE: No. Cyl. Bore and Stroke—N.A.C.C., Hp.	ENGINE: Cylinders Cast	COOLING: Water Circ.	COOLING: Radiator Make	COOLING: Radiator Core and Case	IGNITION: Type	IGNITION: Make	IGNITION: Spark Advance	ELEC. SYSTEM: Type	ELEC. SYSTEM: Make	ELEC. SYSTEM: Extra Cost	GOVERNOR: Type	GOVERNOR: Make	GOVERNOR: Drive
Columbia E-T	2	1,950	144	.....	rol-c.	flex.	s....	36x4s	36x6s	wd.	Bud*	4-4½x5½-27.2	4	cent...	Long.	fin-cst...	sing.	Eismn	hand.	ltg....	Vesta.	75	suct.	Mnrch.	motor.
Commerce E	1	1,340	126	Dtrt.	p-stl.	flex.	s....	34x4s	34x4s	wd.	Buff.	4-3½x5 -19.6	4	ther....	Long.	fin-cst...	sing.	Remy.	hand.	sl&i2.	Remy.	none	cent.	Pierce.	shaft.
Concord B	1	1,750	130	.....	p-stl.	flex.	opt...	36x5s	36x5s	wd.	Bud.	4-3½x5½-19.6	4	ther....	Bush.	fin-cst...	sing.	Eismn	fix...	s&l...	West.	150	none.	none.	none.
Concord A	2	2,400	145	.....	p-stl.	s-flx.	s....	36x4s	36x4d	wd.	Bud.	4-4½x5½-28.9	4	cent...	Bush.	fin-cst...	sing.	Eismn	fix...	s&l...	West.	150	cent.	Pierce.	motor.
Continental FL	1	1,750	144	.....	.....	.....	s....	34x3	36x4	....	.....	4-3½x5½-22.5	2	.....	.....	.....	sing.	Bsch*	fix...	.....	.....	...	suct.	.....	motor.
Continental HL	1½	2,100	144	.....	.....	.....	s....	34x3½	36x5	....	.....	4-3½x5½-22.5	2	.....	.....	.....	sing.	Bsch*	fix...	.....	.....	...	suct.	.....	motor.
Continental J	2	2,300	146	.....	.....	.....	s....	36x4	36x4d	....	.....	4-4½x5½-27.2	2	.....	.....	.....	sing.	Bsch*	fix...	.....	.....	...	suct.	.....	motor.
Continental M	3½	3,300	168*	.....	.....	.....	s....	36x5	36x5d	....	.....	4-4½x5½-32.4	2	.....	.....	.....	sing.	Bsch*	fix...	.....	.....	...	suct.	.....	motor.
Corbitt E	1	1,650	130	.....	p-stl.	flex.	opt...	34x3½s	34x4s	wd.	Con.	4-3½x5 -22.5	4	ther...	Idl...	cel-sht...	sing.	Eismn	hand.	sl&i2.	Disco.	100	cent.	Pierce.	motor.
Corbitt D	1½	1,900	138	.....	p-stl.	flex.	opt...	36x3½s	36x5s	wd.	Con.	4-3½x5 -22.5	4	ther...	Idl...	cel-sht...	sing.	Eismn	hand.	sl&i2.	Disco.	100	cent.	Pierce.	motor.
Corbitt C	2	2,650	148	.....	p-stl.	flex.	s....	36x4s	36x7s	wd.	Con.	4-4½x5½-27.2	4	cent...	R-T.	fin-cst...	sing.	Eismn	hand.	none.	none.	....	cent.	Pierce.	motor.
Corbitt B	2½	2,900	148	.....	p-stl.	flex.	s....	36x4s	36x7s	wd.	Con.	4-4½x5½-27.2	4	cent...	R-T.	fin-cst...	sing.	Eismn	hand.	none.	none.	....	cent.	Pierce.	motor.
Corbitt A	3½	3,800	168	.....	rol-c.	rigid.	s....	36x5s	36x5d	wd.	Con.	4-4½x5½-32.4	2	cent...	R-T.	fin-cst...	sing.	Eismn	hand.	none.	none.	....	cent.	Pierce.	motor.
Corbitt AA	5	4,200	168	.....	rol-c.	rigid.	s....	36x6s	40x6d	c-s.	Con.	4-4½x6 -32.4	2	cent...	R-T.	fin-cst...	sing.	Eismn	hand.	none.	none.	....	cent.	Pierce.	motor.
Corliss A	½	800*	100	.....	.....	.....	pnu..	31x4	31x4	....	.....	4-3½x4½-15.6	4	.....	.....	.....	sing.	Spltf..	hand.	.....	.....	....	.....	.....	.....
Couple-Gear HC	3½	5,600	144*	own...	.....	.....	s....	36x4d	36x4d	....	Wis.	4-5½x7 -53.0	1	ther....	.....	.....	.....	Eismn	.....	ltg.....	.....	....	.....	Wis.....	.....
Couple-Gear AC	5	6,400	144*	own...	.....	.....	s....	36x5d	36x5d	....	Wis.	4-5½x7 -53.0	1	ther....	.....	.....	.....	Eismn	.....	ltg.....	.....	....	cent.	Wis.....	f-whl.
Croce 17	½	825	108	.....	.....	.....	s*...	32x4	32x4	....	Wis.	4-3½x5 -16.9	4	.....	.....	.....	.....	Bosch.	fix...	.....	.....	....	.....	.....	.....
Dart E	1	1,800	130	Savg..	.....	.....	s....	34x3½	34x5	....	Bud..	4-3½x5½-22.5	4	.....	.....	.....	.....	Eismn	fix...	.....	.....	....	.....	.....	.....
Dart C-C4	2	2,470	150	Savg..	.....	.....	s....	36x4	36x7	....	Bud..	4-4½x5½-28.9	4	.....	.....	.....	.....	Eismn	fix...	.....	.....	....	cent.	Simplex.	motor.
Dart L	3½	3,400	160	Savg..	.....	.....	s....	36x5	36x10	....	Bud..	4-4½x6 -32.4	4	.....	.....	.....	.....	Eismn	hand.	.....	.....	....	cent.	Simplex.	motor.
Dayton H	2	2,650	.....	.....	.....	.....	s....	36x4	36x3½d	....	Wis.	4-4½x5 -29.0	2	.....	.....	.....	.....	Bosch	hand.	.....	.....	....	.....	.....	.....
Dayton J	3½	3,400	.....	.....	.....	.....	s....	36x5	36x4d	....	Wis.	4-4½x6 -29.0	4	.....	.....	.....	.....	Bosch.	hand.	.....	.....	....	.....	.....	.....
Dayton K	3½	3,400	.....	.....	.....	.....	s....	36x5	36x4d	....	Wis.	4-4½x5½-36.1	2	.....	.....	.....	.....	Bosch.	hand.	.....	.....	....	.....	.....	.....
Dayton M	5	4,500	.....	.....	.....	.....	s....	36x6	42x5d	....	Wis.	4-5½x7 -44.2	2	.....	.....	.....	.....	Bosch.	hand.	.....	.....	....	.....	.....	.....
Dayton E	7½	4,950	.....	.....	.....	.....	s....	36x7	42x6d	....	Wis.	4-5½x7 -44.2	2	.....	.....	.....	.....	Bosch.	hand.	.....	.....	....	.....	.....	.....
D-E J	½	950	108	Savg..	p-stl.	s-flx.	pnu..	33x4s	33x4s	wd.	L-R..	4-3½x4½-15.6	4	ther...	Bush.	fin-sht...	sing.	Brlng.	hand.	s&l...	Al-Ch.	none	none.	none.	.....
D-E A	1½	1,495	128	Savg..	p-stl.	s-flx.	s....	34x3s	34x4s	wd.	Con.	4-3½x5 -19.6	4	ther...	Bush.	fin-cst...	sing.	Brlng.	fix...	none.	none.	.....	.....	none.	.....
D-E B	2	1,755	144	Savg..	p-stl.	s-flx.	s....	34x3½s	34x5s	wd.	Con.	4-3½x5 -22.5	4	ther...	Bush.	fin-cst...	sing.	Brlng.	fix...	none.	none.	.....	.....	none.	.....
D-E C	3	2,365	150	Savg..	p-stl.	s-flx.	s....	36x4s	36x7s	wd.	Bud..	4-4½x5½-28.9	4	ther...	Bush.	fin-cst...	sing.	Brlng.	fix...	none.	none.	.....	.....	none.	.....
DeKalb E	2	2,100	134	.....	p-stl.	flex.	s....	34x3½s	36x5s	wd.	Con.	4-4½x5½-27.2	4	cent...	Bush.	cel-p-s...	sing.	Eismn	fix...	none.	none.	....	cent.	Pierce.	motor.
DeKalb E	2½	2,450	136	.....	p-stl.	flex.	s....	36x4s	36x6s	wd.	Con.	4-4½x5½-27.2	4	cent...	Bush.	cel-p-s...	sing.	Eismn	fix...	none.	none.	....	cent.	Mnrch.	motor.
Denby 12	1	1,490	124	.....	.....	.....	s....	34x3	34x4	....	Con.	4-3½x5 -19.6	4	.....	.....	.....	sing.	Eismn	fix...	s&l...	Bijur.	....	cent.	Mnrch.	motor.
Denby 13	2	2,025	144	.....	.....	.....	s....	36x3½	36x6	....	Con.	4-3½x5 -22.5	4	.....	.....	.....	sing.	Eismn	fix...	s&l...	Bijur.	....	cent.	Mnrch.	motor.
Denby 15	3	2,525	144	.....	.....	.....	s....	36x4	36x4d	....	Con.	4-3½x5 -22.5	4	.....	.....	.....	sing.	Eismn	fix...	s&l...	Bijur.	....	cent.	Mnrch.	motor.
Denmo 12	¾	960	115	.....	.....	.....	pnu..	32x4	32x4	....	H-S..	4-3½x5 -16.9	4	.....	.....	.....	sing.	Spltf..	.....	s&l...	Bijur.	....	cent.	Mnrch.	motor.
Denmo 10	1½	1,490	124	.....	.....	.....	s*...	34x4½	34x4	....	.....	4-3½x5 -22.5	4	.....	.....	.....	sing.	Spltf..	.....	stg....	Spltf..	....	.....	.....	d-s ft.
Diamond-T J5	1	1,725	132	.....	.....	.....	s....	36x3	36x4	....	Con.	4-3½x5 -19.6	4	.....	.....	.....	sing.	Bosch.	fix...	.....	.....	....	cent.	Pierce.	.....
Diamond-T J4	1½	2,200	154*	.....	.....	.....	s....	36x3½	36x5	....	Con.	4-3½x5 -22.5	4	.....	.....	.....	sing.	Bosch.	fix...	.....	.....	....	.....	.....	.....
Diamond-T J3	2	2,475	154*	.....	.....	.....	s....	36x4	36x6	....	Con.	4-4½x5½-27.2	4	.....	.....	.....	sing.	Bosch.	fix...	.....	.....	....	.....	.....	.....
Diamond-T L	3½	3,750	170*	.....	.....	.....	s....	36x5	36x5d	....	Con.	4-4½x5½-32.4	2	.....	.....	.....	sing.	Bosch.	fix...	.....	.....	....	cent.	Pierce.	motor.
Diamond-T R	5	4,600	170*	.....	.....	.....	s....	36x6	40x6d	....	Con.	4-4½x5½-32.4	2	.....	.....	.....	sing.	Bosch.	hand.	.....	.....	....	suct.	Mnrch.	motor.
Dispatch	¾	1,100	120	own...	.....	.....	pnu..	34x4s	34x4s	wd.	Wis.	4-3½x5 -22.5	4	.....	.....	.....	sing.	Bosch.	hand.	.....	.....	....	suct.	Mnrch.	motor.
Doane	2½	3,000	150	.....	.....	.....	s....	36x4	36x7	....	.....	4-4½x5½-29.0	2	ther....	Amer	cel-sht...	sing.	Delco	hand.	sl&i..	USL.	none	none.	none....	none..
Doane	6	4,750	178	.....	.....	.....	s....	36x6	38x6d	....	.....	4-4½x6½-36.1	2	.....	.....	.....	sing.	Bosch.	auto.	.....	.....	....	.....	Wau.....	.....
Dorris I-B-W	2	2,285	144	.....	.....	.....	s....	36x4	36x4d	....	own..	4-4½x5 -30.7	2	.....	.....	.....	sing.	Bosch.	auto.	.....	.....	....	cent.	Wau....	motor.
Duplex D	3½	3,600	130*	.....	.....	.....	s....	36x6	36x6	....	Bud..	4-4½x5½-29.0	4	.....	.....	.....	sing.	Bosch.	hand.	.....	.....	....	cent.	Pierce...	motor.
Ellsworth 25A	½	.....	108	p&b...	p-stl.	flex.	pnu..	30x3½s	30x3½s	wd.	Lyc..	4-3½x5 -16.9	4	ther....	Can..	cel.....	sing..	hand..	sli2..	.....	.....	....	none.	none....	none..
Fageol	2	2,750	144	.....	rol-c.	.....	s....	34x4s	36x7s	wd*.	Wau.	4-4 x5¾-25.6	2	cent...	Per..	cel-cst..	sing..	Eismn	fix...	.....	.....	....	cent.	Wau....	motor.
Fargo P	2	2,200	146	own...	rol-c.	s-flx.	s....	36x4s	36x6s	wd.	own..	4-3½x5 -22.5	4	ther....	own..	fin-cst...	sing.	Dixie..	hand-	sli2..	West..	150	suct.	Mnrch.	motor.
Federal S	1	1,750	132	own...	.....	.....	s....	34x3	34x4	....	own..	4-3½x5½-19.6	4	.....	.....	.....	sing.	Eismn	fix...	s&l...	.....	....	cent.	Smplex.	motor.
Federal T	1½	2,200	144	own...	.....	.....	s....	36x3½	36x5	....	own..	4-3½x5½-22.5	4	.....	.....	.....	sing.	Eismn	fix...	s&l...	Wstg.	....	cent.	Smplex.	motor.
Federal U	2	2,450	144	own...	.....	.....	s....	36x4	36x7*	....	own..	4-4½x5½-22.5	4	.....	.....	.....	sing.	Eismn	fix...	s&l...	Wstg.	....	cent.	Smplex.	motor.
Federal W	3½	3,150	156	own...	.....	.....	s....	36x5	36x5d	....	own..	4-4½x5½-29.0	4	.....	.....	.....	sing.	Eismn	fix...	s&l...	Wstg.	....	cent.	own....	motor.
Federal X	5	4,200	156	own...	.....	.....	s....	36x6	40x6d*	....	own..	4-4½x5½-29.0	4	.....	.....	.....	sing.	Eismn	fix...	ltg....	Wstg.	....	cent.	own....	motor.
Forschler AO	1	1,815	138	.....	rol-c.	flex.	s....	34x3s	34x4s	wd.	Con.	4-3½x5 -19.6	4	cent...	E-M.	sq-t-sht..	sing.	Bosch.	fix...	.....	.....	....	cent.	Simplex.	motor.
Forschler BO	2	2,475	138	.....	rol-c.	flex.	s....	34x4s	34x6s	wd.	Con.	4-4½x5½-27.2	4	cent...	E-M.	sq-t-sht..	sing.	Bosch.	fix...	.....	.....	....	cent.	Mnrch.	motor.
Ford 1	1	600	123	.....	p-stl.	.....	s....	30x3s	32x3s	wd.	own..	4-3½x4 -22.5	4	ther....	own..	fin-s-s...	sing.	own...	hand.	ltg....	own..	....	cent.	Mnrch.	motor.
F. W. D B	3	4,000	124	Prsh..	.....	.....	s....	36x6	36x6	....	Wis.	4-4½x5½-36.1	2	ther....	.....	.....	sing..	Eismn	hand.	s&l...	N-E..	.....	none.	none....	.....
Fulton F-2	1½	1,420	136	.....	p-stl.	s-flx.	s....	34x3½s	34x5s	wd.	own..	4-3½x5 -19.6	4	ther....	own..	sq-t-c-i..	sing.	Spltf..	hand.	opt....	.....	....	.....	Pierce...	motor.
Garford 75B	1	1,750	128	own...	.....	.....	s*...	34x4½	36x4	....	Bud..	4-3½x5½-19.6	4	ther....	.....	.....	sing..	Spltf..	hand.	s&l...	Wstg.	....	suct.	Mnrch.	motor.
Garford 66B	1½	2,100	142*	own...	.....	.....	s....	36x3½	36x5	....	Bud..	4-3½x5½-22.5	4	pump....	.....	.....	sing..	Spltf..	hand.	s&l...	Westg.	....	suct.	Mnrch.	motor.
Garford 70B	2	2,600	142*	own...	.....	.....	s....	36x4	36x4d	....	Bud..	4-4½x5½-29.0	4	pump....	.....	.....	sing..	Bosch.	hand.	s&l...	Wstg.	....	suct.	Mnrch.	motor.
Garford 77B	3½	3,700	128*	own...	.....	.....	s....	36x5	40x5d	....	Wis.	4-4½x6 -28.0	4	pump....	.....	.....	sing..	Bosch.	hand.	s&l...	Wstg.	....	suct.	Mnrch.	motor.
Garford 68	5	4,500	128*	own...	.....	.....	s....	36x6	40x6d	....	Wis.	4-4½x5½-36.1	2	pump....	.....	.....	sing..	Bosch.	hand.	s&l...	Wstg.	....	cent.	own....	motor.
Garford 69	6	4,700	128*	own...	.....	.....	s....	36x6	40x7d	....	Wis.	4-5½x5½-41.6	2	pump....	.....	.....	sing..	Bosch.	hand.	.....	Wstg.	....	suct.	own....	motor.
Garford Tractor	4½	2,700	116	own...	.....	.....	.....	36x4	36x4d	....	Bud..	4-4½x5½-29.0	4	pump....	.....	.....	sing..	Bosch.	hand.	.....	Wstg.	....	suct.	own....	motor.
Garford Tractor	7½	3,800	105	own...	.....	.....	.....	36x5	40x5d	....	Wis.	4-4½x5½-36.1	2	pump....	.....	.....	sing..	Bosch.	hand.	.....	Wstg.	....	.....	Mnrch.	.....
Garford Tractor	10	4,600	102	own...	.....	.....	.....	36x6	40x6d	....	Wis.	4-4½x5½-41.5	2	pump....	.....	.....	sing..	Bosch.	hand.	.....	Wstg.	....	.....	own....	.....
Gary F	1	.....	130	P&B..	p-stl.	flex.	s....	36x3½s	36x4s	wd.	Bud*	4-3½x5½-22.5	4	ther....	Chgo	zz-t-ps..	sing.	Eismn	fix...	opt...	Vesta.	....	suct.	Mnrch.	motor.
Gary G	1½	.....	144	P&B..	p-stl.	flex.	s....	36x3½s	36x5s	wd.	Bud..	4-4½x5½-28.9	4	cent....	Chgo	zz-t-ps..	sing.	Eismn	fix...	opt...	Vesta.	....	cent.	Simplex.	motor.

ABBREVIATIONS—Types of Construction

*Other Options
amid—amidships
auto—automatic
c—center
c&l—center and left
c-s—cast steel
cent—centrifugal
cel-cst—cellular core cast case
cel-sht—cellular core sheet case
cylinders cast, 2 in pairs
cylinders cast, 4 in block
cylinders cast, 3 in threes
cylinders cast, 1 singly
d—dual
d-d—dry disk
d-p—dry plate
d-rd—double reduction
elec—electric
ext-dst—external drive-shaft
ext-f-s—external front wheels.
ext-jst—external jack-shaft
ext-r-w—external rear wheel
fab—fabric
fin-sht—finned tube core sheet case
flx—fixed
flex—flexible
fric—friction
grav—gravity
gset—gearset
hyd—hydraulic
ind-c—individual clutch
int-dst—internal drive-shaft
int-f-w—internal front wheels
in-g—internal gear
in-g-4—internal gear drive on 4 wheels
int-r-w—internal rear wheel
jst—unit with jackshaft
l—left
ltg—lighting
mtl—metal
mtr—unit with motor
opt—optional
pist—piston pump
plan—planetary
pnu—pneumatic
pres—pressure
prog—progressive sliding gear
p-stl—pressed steel
r—right
r-a—unit with rear axle
ring-cst—ring core cast case
rol-c—rolled channel
rol-i—rolled I-beam
r-rd—radius rods
selec—selective sliding gear
s-flx—semi-flexible
s & l—starting and lighting
s, l & i—starting, lighting and ignition
s, l & i 2—starting, lighting and ignition two-unit
sing—single
s—solid
spgs—springs
sq-t-sht—square tube core sheet case
stk—stock
sub-f—sub-frame
ther—thermo-syphon
tor-a—torque arm
tor-t—torsion tube
vacm—vacuum
wd—wood
w-d—multiple disk in oil
worm—top worm
w-p—wet plate
zz-t-sht—zig-zag tube core sheet case

Prices are exclusive of the 3 per cent. Government war tax

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Commercial Vehicles for 1918—Continued

ENGINE				TRANSMISSION										BRAKES		CONTROL			UNIVERSALS		
SPEED		FUEL SYS.		CLUTCH		GEARSET				FINAL DRIVE						STEERING GEAR					
R.p.m.	Truck in M.p.h.	Carbureter Make	Fuel Feed	Type	Make	Type	Make	Placed	Speeds	Type	Axle Make	Total Gear Reduction	Propulsion Taken By	Torque Taken By	Springs Make	Foot	Hand	Placed	Make	Levers	Type	Make	Name and Model
,200	14½	Shkspr.	grav.	cone	Hart	selec	Covert.	amid.	3	in-g	Russl.	9.4	spgs	spgs	Perf	int-r-w.	ext-r-w.	l.	own.	c.	Metl.	Spicer.	Columbia E-T
,360	20	Zenith.	vacm.	cone	Dtrt	selec	Dtrt	mtr	3	in-g	Torb	7.0	spgs	spgs	Dtrt	int-r-w.	ext-r-w.	l.	Hays.	c.	Metl.	Spicer.	Commerce E
.....	.....	Zenith.	grav.	d-d	Warner	selec	Warner	mtr	3	worm.	Timkn.	7.0	spgs	spgs	A-D	int-r-w.	int-r-w.	l.	Wrnr.	c.	.....	.....	Concord B
,275	.....	.....	grav.	d-d	Warner	selec	Warner	mtr	3	worm	Timkn.	8.5	spgs	spgs	A-D	int-r-w.	int-r-w.	l.	Ross.	c.	.....	.....	Concord A
.....	.....	Stmbg.	.....	d-d	.....	selec	.....	mtr	3	worm	.....	7.7	spgs	spgs	.....	.....	.....	.....	.....	.....	.....	.....	Continental FL
.....	.....	Stmbg.	.....	d-d	.....	selec	.....	mtr	3	worm	.....	9.2	spgs	spgs	.....	.....	.....	.....	.....	.....	.....	.....	Continental HL
.....	.....	Stmbg.	.....	d-d	.....	selec	.....	mtr	3	worm	.....	9.2	spgs	spgs	.....	.....	.....	.....	.....	.....	.....	.....	Continental J
.....	18	Stmbg.	.....	d-d	.....	selec	.....	mtr	3	worm	.....	10.5	spgs	spgs	.....	.....	.....	.....	.....	c.	.....	.....	Continental M
,080	18	Stmbg.	grav.	d-d	Fuller	selec	Fuller	mtr	3	worm	Shel	6.5	spgs	spgs	Shel	int-r-w.	int-r-w.	l.	Lavn.	c.	.....	.....	Corbitt E
,200	16	Stmbg.	grav.	d-d	Fuller	selec	Fuller	mtr	3	worm	Shel	7.5	spgs	spgs	Shel	ext-r-w.	int-r-w.	l.	Ross.	c.	.....	.....	Corbitt D
,075	14	Stmbg.	vacm.	d-d	B-Lipe	selec	B-Lipe	mtr	3	worm	Shel	8.66	spgs	spgs	Shel	int-r-w.	int-r-w.	l.	Ross.	c.	.....	.....	Corbitt C
,290	14	Stmbg.	vacm.	d-d	B-Lipe	selec	B-Lipe	mtr	4	worm	Shel	8.66	spgs	spgs	Shel	int-r-w.	int-r-w.	l.	Ross.	.....	.....	.....	Corbitt B
,250	12	Stmbg.	.....	m-d	H-Shaw	mesh	Cotta	amid.	3	worm	Shel	8.75	spgs	spgs	Shel	int-r-w.	int-r-w.	l.	Ross.	c.	.....	.....	Corbitt A
,000	10	Stmbg.	vacm.	m-d	H-Shaw	mesh	Cotta	amid.	3	worm	Shel	8.75	r-rd	tor-a	Shel	int-r-w.	int-r-w.	l.	Ross.	c.	.....	.....	Corbitt AA
.....	.....	Schblr.	grav.	d-d	.....	.....	.....	mtr	3	bevl	.....	4.5	tor-t	tor-t	.....	int-r-w.	int-r-w.	.....	.....	.....	.....	.....	Corliss A
,500	10	Stmbg.	grav.	.....	.....	selec	.....	.....	1	bevl	own	25.0	r-rd	r-rd	.....	.....	ext-4-w.	.....	own	.....	.....	.....	Couple-Gear HC
,500	10	Stmbg.	grav.	.....	.....	selec	.....	amid.	1	bevl	own	25.0	r-rd	r-rd	.....	.....	ext-4-w.	.....	own	.....	.....	.....	Couple-Gear AC
,000	17½	Zenith.	grav.	d-d	B-Lipe	selec	B-Lipe	mtr	3	bevl	Timkn.	5.0	spgs	spgs	.....	int-	ext-r-w.	.....	Lavn.	.....	.....	.....	Croce 17
.....	.....	Master.	.....	d-d	Fuller	selec	Fuller	mtr	3	worm	Timkn.	7.0	spgs	spgs	.....	int-r-w.	int-r-w.	.....	Ross.	.....	Metl.	Arvac.	Dart E
,100	14	Master.	grav.	d-d	Muncie	selec	Muncie	mtr	4	worm	Timkn.	9.2	spgs	spgs	.....	int-r-w.	int-r-w.	.....	Ross.	.....	Metl.	Arvac.	Dart C-C4
,100	11	Master.	grav.	d-d	Warner	selec	Warner	amid.	4	worm	Timkn.	10.7	spgs	spgs	.....	int-r-w.	int-r-w.	.....	Ross.	.....	Metl.	Arvac.	Dart L
.....	.....	Stmbg.	grav.	.....	M-Evn.	selec	own	jst	3	chn	Timkn.	.....	r-rd	.....	.....	int-r-w.	ext-j-s.	.....	Ross.	.....	.....	.....	Dayton H
.....	.....	Stmbg.	grav.	d-p	B-Beck.	selec	own	amid.	3	worm	TDB	.....	r-rd	tor-a	.....	int-r-w.	int-r-w.	.....	Ross.	.....	.....	.....	Dayton
.....	.....	Stmbg.	grav.	m-d	M-Evn.	selec	own	jst	3	chn	Timkn.	.....	r-rd	.....	.....	int-r-w.	ext-j-s.	.....	Ross.	.....	.....	.....	Dayton K
.....	.....	Stmbg.	grav.	m-d	M-Evn.	selec	own	jst	3	chn	Timkn.	.....	r-rd	.....	.....	int-r-w.	ext-j-s.	.....	Ross.	.....	.....	.....	Dayton M
.....	.....	Stmbg.	grav.	m-d	M-Evn.	selec	own	jst	3	chn	Timkn.	.....	r-rd	.....	.....	int-r-w.	ext-j-s.	.....	Ross.	.....	.....	.....	Dayton E
.....	.....	Schblr.	grav.	d-d	Dtrt	selec	Dtrt	mtr	3	worm	Shel	6.2	spgs	spgs	Iron	int-r-w.	int-r-w.	l.	Gem.	c.	.....	Hart.	D-E J
,225	16	Zenith.	grav.	d-p	B-Beck.	selec	Covert.	mtr	3	worm	Hays	7.75	spgs	spgs	Iron	int-r-w.	ext-r-w.	l.	Ross.	c.	.....	Hart.	D-E A
,233	15	Zenith.	grav.	d-p	B-Beck.	selec	Covert.	mtr	3	worm	Hays	8.33	spgs	spgs	Iron	int-r-w.	ext-r-w.	l.	Ross.	c.	.....	Hart.	D-E B
,123	14	Zenith.	grav.	d-p	B-Beck.	selec	Covert.	mtr	3	worm	Hays	8.66	spgs	spgs	Iron	int-r-w.	int-r-w.	l.	Ross.	c.	.....	Hart.	D-E C
,200	15	Master.	grav.	cone	Fuller	selec	Fuller	mtr	3	worm	Timkn.	8.5	r-rd	tor-a	Mthr	int-r-w.	int-r-w.	l.	Ross.	c.	.....	K-B	DeKalb E
,200	13	Master.	grav.	cone	Fuller	selec	Fuller	mtr	3	worm	Timkn.	10.33	r-rd	tor-a	Mthr	int-r-w.	int-r-w.	l.	Ross.	c.	.....	K-B	DeKalb E
,440	.....	Zenith.	.....	d-d	.....	selec	.....	mtr	3	in-g	Russl	8.2	spgs	spgs	.....	int-r-w.	int-r-w.	.....	.....	.....	.....	.....	Denby 12
,320	.....	Zenith.	.....	d-d	.....	selec	.....	mtr	3	in-g	Russl	9.8	spgs	spgs	.....	int-r-w.	ext-r-w.	.....	.....	.....	.....	.....	Denby 13
,200	.....	Zenith.	.....	d-d	.....	selec	.....	mtr	3	in-g	Russl	10.9	spgs	spgs	.....	int-r-w.	ext-r-w.	.....	.....	.....	.....	.....	Denby 15
.....	20	Carter.	.....	d-p	B-Beck.	selec	G-Lees	mtr	3	in-g	Torb	.....	spgs	spgs	.....	int-r-w.	ext-r-w.	.....	Dit	.....	.....	.....	Denmo 12
.....	.....	Stewrt.	.....	d-p	.....	selec	.....	mtr	3	in-g	.....	.....	spgs	spgs	.....	ext-r-w.	int-r-w.	.....	.....	.....	.....	.....	Denmo 10
,300	18	Rayfld.	.....	d-d	B-Lipe	selec	B-Lipe	mtr	3	worm	Timkn.	7.7	spgs	spgs	.....	int-r-w.	int-r-w.	.....	Gem.	.....	Metl.	Spicer.	Diamond-T J5
,250	16	Rayfld.	.....	d-d	B-Lipe	selec	B-Lipe	mtr	3	worm	Timkn.	7.7	spgs	spgs	.....	int-r-w.	int-r-w.	.....	Gem.	.....	Metl.	Spicer.	Diamond-T J4
,100	15	Rayfld.	.....	d-d	B-Lipe	selec	B-Lipe	mtr	3	worm	Timkn.	7.7	spgs	spgs	.....	int-r-w.	int-r-w.	.....	Gem.	.....	Metl.	Spicer.	Diamond-T J3
775	12	Rayfld.	.....	d-d	B-Lipe	selec	B-Lipe	mtr	4	worm	Timkn.	6.8	spgs	spgs	.....	int-r-w.	int-r-w.	.....	Gem.	.....	Metl.	Spicer.	Diamond-T L
.....	.....	Rayfld.	.....	d-d	B-Lipe	selec	B-Lipe	amid.	4	worm	Timkn.	13.6	spgs	spgs	.....	int-	int-	.....	Gem.	.....	Metl.	Spicer.	Diamond-T R
,000	30	Rayfld.	vacm.	.....	own	.....	own	.....	3	chn	own	4.0	r-rd	.....	Tut	int-r-w.	int-r-w.	l.	Fost.	c.	Metl.	Blood.	Dispatch
,000	14	Holley.	.....	d-d	.....	selec	.....	mtr	3	chn	.....	8.0	r-rd	.....	.....	int-	ext-	.....	.....	.....	.....	.....	Doane
,000	10	Holley.	.....	d-d	.....	selec	.....	mtr	3	chn	.....	10.5	r-rd	.....	.....	int-	ext-	.....	.....	.....	.....	.....	Doane
,085	15	Stmbg.	.....	d-d	own	selec	own	mtr	3	worm	Timkn.	7.8	spgs	spgs	.....	int-r-w.	int-r-w.	.....	Gem.	.....	.....	.....	Dorris I-B-W
940	12	Schblr.	.....	p	B-Lipe	id-e	Muncie	mtr	6	in-g	own	16.0	r-rd	tor-a	.....	ext-sht.	ext-sht.	.....	Lavn.	.....	.....	.....	Duplex D
.....	.....	Carter.	grav.	cone*	Mech	prog	Mech	mtr	3	bevl	Gemco	.....	spgs	spgs	Shel	int-r-w.	int-r-w.	l.	Fost.	c.	.....	own.	Ellsworth 25A
,100	15	Zenith.	grav.	d-p	B-Beck.	mesh	Cotta	mtr	3	worm	Timkn.	7.7	spgs	spgs	Mthr	int-r-w.	int-	l.	Ross.	c.	.....	.....	Fageol
,250	15	Zenith.	grav.	d-p	B-Beck.	selec	G-L	.....	3	in-g	Russl	9.5	spgs	spgs	Russl	int-r-w.	ext-r-w.	l.	Jacx.	c.	Metl.	Spicer.	Fargo P
,200	18	Zenith.	.....	d-p	B-Beck.	selec	own	.....	3	worm	Timkn.	7.0	r-rd	spgs	.....	int-r-w.	int-r-w.	.....	Gem.	.....	Metl.	Spicer.	Federal S
,100	15	Zenith.	.....	dry-p	B-Beck	selec	.....	amid.	4	worm	Timkn.	9.25	r-rd	spgs	.....	int-r-w.	int-r-w.	.....	Gem.	.....	Metl.	Spicer.	Federal T
,031	13	Zenith.	.....	dry-p	B-Beck	selec	.....	amid.	4	worm	Timkn.	8.5	r-rd	spgs	.....	int-r-w.	int-r-w.	.....	Gem.	.....	Metl.	Spicer.	Federal U
900	12	Stmbg.	.....	dry-p	B-Beck	selec	Warner	amid.	4	worm	Timkn.	10.3	r-rd	spgs	.....	int-r-w.	int-r-w.	.....	Gem.	.....	Metl.	Spicer.	Federal W
,000	10	Zenith.	.....	d-p	B-Beck.	selec	Warner	amid.	4	worm	Timkn.	11.6	r-rd	spgs	.....	int-r-w.	int-r-w.	.....	Gem.	.....	Metl.	Spicer.	Federal X
,200	15	Zenith.	grav.	d-d	Fuller	selec	Fuller	mtr	3	worm	Shel	7.7	spgs	spgs	Del	int-r-w.	int-r-w.	l.	Ross.	c.	.....	.....	Forschler AO
,200	12	Zenith.	grav.	d-d	Fuller	selec	Fuller	mtr	3	worm	Shel	8.7	spgs	spgs	Del	int-r-w.	int-r-w.	l.	Ross.	c.	.....	.....	Forschler BO
.....	.....	Holley.	grav.	d-d	own	plan	own	mtr	2	worm	own	7.2	r-rd	tor-t	own	int-r-w.	ext-d-s.	l.	own.	c.	.....	.....	Ford
,100	14	Stmbg.	.....	d	M-Evn.	id-e	Cotta	amid.	3	bevl	own	8.9	spgs	tor-a	.....	ext-r-w.	ext-sht.	.....	Ross.	.....	Metl.	Blood.	F. W. D. B
,300	16	Sundm.	grav.	cone	own	selec	own	amid.	3	in-g	Russl	8.2	spgs	spgs	Perf	int-r-w.	ext-r-w.	l.	Levn.	c.	.....	.....	Fulton F-2
,238	17	Rayfld.	grav.	d-d	B-Lipe	selec	B-Lipe	mtr	3	worm	.....	7.8	spgs	spgs	.....	int-r-w.	int-r-w.	.....	Ross.	.....	Metl.	Spicer.	Garford 75B
,110	14	Rayfld.	grav.	d-d	B-Lipe	selec	B-Lipe	amid.	3	worm	.....	8.5	spgs	spgs	.....	int-r-w.	ext-r-w.	.....	Ross.	.....	Metl.	Spicer.	Garford 66B
934	13	Rayfld.	grav.	d-d	B-Lipe	selec	B-Lipe	amid.	3	worm	.....	7.7	spgs	spgs	.....	int-r-w.	ext-r-w.	.....	Ross.	.....	Metl.	Spicer.	Garford 70B
,041	12	Rayfld.	grav.	d-d	B-Lipe	selec	B-Lipe	amid.	4	worm	.....	10.3	r-rd	spgs	.....	ext-d-s.	int-r-w.	.....	Ross.	.....	Metl.	Spicer.	Garford 77B
,005	9	Rayfld.	grav.	d-d	B-Lipe	selec	B-Lipe	jst	4	chn	.....	13.3	r-rd	.....	.....	int-r-w.	ext-d-s.	.....	Ross.	.....	Metl.	Spicer.	Garford 68
920	8	Rayfld.	grav.	d-d	B-Lipe	selec	B-Lipe	jst	4	chn	.....	13.3	r-rd	.....	.....	int-r-w.	int-d-s.	.....	Ross.	.....	Metl.	Spicer.	Garford 69
.....	.....	Rayfld.	grav.	d-d	.....	selec	.....	amid.	3	worm	Timkn.	7.5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Garford Tractor
.....	.....	Rayfld.	grav.	d-d	.....	selec	.....	amid.	4	worm	Timkn.	7.5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Garford Tractor
.....	.....	Rayfld.	grav.	d-d	.....	selec	.....	amid.	4	chn	own	7.5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Garford Tractor
,275	15	Stmbg*	grav.	d-d	Fuller	selec	Fuller	mtr	3	worm	Shel	7.8	spgs	spgs	Tut	int-r-w.	int-r-w.	l.	Lavn.	c.	Metl.	Blood.	Gary F
,275	15	Stmbg*	grav.	d-d	Fuller	selec	Fuller	mtr	3	worm	Shel	7.75	spgs	spgs	Tut	int-r-w.	int-r-w.	l.	Lavn.	c.	Metl.	Blood.	Gary G

ABBREVIATIONS—Makers of Parts

Other Options
-K—Atwater-Kent
ut-I.—Auto-Lite
-Beck—Borg & Beck
-Lipe—Brown-Lipe
ling—Berling
rm—Bremer
rem—Bremer
ud—Buda
an—Candler
elfr—Celfor
hgo—Chicago
on—Continental
onn—Connecticut
trt—Detroit
Dynt—Dyneto
Eisnn—Eisemann
E-M—English & Mersick
Eur—Eureka
Fed—Fedders
Franck—Francke
G&O—G & O Mfg. Co.
GBS—Golden, Belknap & Swarts
G-C—Garden City
Gem—Gemmer
Har—Harrison
Hart—Hartford
Hays—Hayes
Hig—Higgins
H-Shaw—Hele-Shaw
H-S—Herschell-Spillman
Idl—Ideal
Iron—Iron City
Jacx—Jackson-Church-Wilcox
Jhnson—Johnson
Kal—Kalamazoo
K-B—Kinsler-Bennett
Key-H—Keystone-Hindley
Lavn—Lavigne
LeR—LeRoi
Lgt—Light
Ligt—Liggett
Lyc—Lycoming
M'C—McCord
Merl—Merrill
Mil—Milwaukee
March—Monarch
Mthr—Mather
Natl—National
N. A.—North American
P & B—Parish & Bingham
Perf—Perfection
Prsh—Parish
R-T—Rome-Turney
Rayfld—Rayfield
Rowl—Wm. Harvey Rowland
Russl—Russel
Rut—Rutenber
Savg—Savage Arms
Salsby—Salisbury
Schblr—Schebler
Shel—Sheldon
Shkspr—Shakespeare
Smth—A. O. Smith
S-P—Spring-Perch
Spltf—Splitdorf
Stewrt—Stewart
Stmbg—Stromberg
Sundmn—Sunderman
S-W—Sparks-Withington
Ther—Thermoid
Timkn—Timken
Torb—Torbenson
Tut—Tuthill
Univ—Universal Machine Co.
Wau—Waukesha
Wilcx—Wilcox
Wis—Wisconsin

Prices are exclusive of the 3 per cent. Government war tax

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Technical Specifications of Gasoline

Name and Model	Tons Capacity	Chassis Price	Wheelbase, Inches	FRAME			TIRES			Wheels	ENGINE			COOLING			IGNITION			ELEC. SYSTEM			GOVERNOR		
				Make	Material	Type	Kind	Size in Ins. Front	Size in Ins. Rear		Make	No. Cyl. Bore and Stroke—N.A.C.C., Hp.	Cylinders Cast	Water Circ.	Radiator Make	Radiator Core and Case	Type	Make	Spark Advance	Type	Make	Extra Cost	Type	Make	Drive
Gary.....H	2	.....	156	P&B..	p-stl.	flex..	s....	36x4s	36x6s	wd..	Bud..	4-4½x5½-28.9	4	cent...	Chgo	zz-t-sh..	sing..	Eismn	fix...	opt...	Vesta.	....	cent..	Simplex.	motor.
Gary.....HU	3	.....	162	P&B..	p-stl.	flex..	s....	36x4s	36x7s	wd..	Bud..	4-4½x5½-28.9	4	cent...	Perf..	.....	sing..	Eismn	auto	opt...	Vesta.	....	cent..	Simplex.	motor.
Gary.....K	4	.....	162	own...	rol-c.	s-flx..	s....	36x5s	36x5d	wd..	Bud..	4-4½x6 -32.4	4	cent...	Perf..	-cst..	sing..	Eismn	auto	opt...	Vesta.	....	cent..	Duplex.	dplx..
G. A. Schacht.....	2	2,750	138	own...	rol-c.	flex..	s....	36x3½s	36x6s	wd..	Bud..	4-4½x5½-28.9	4	cent...	own..	cel-p-s..	sing..	Bosch.	hand.	none..	none..	....	cent..	own....	motor.
G. A. Schacht.....	2½	3,000	156	own...	rol-c.	flex..	s....	36x4s	36x4d	wd..	Bud..	4-4½x5½-28.9	4	cent...	own..	zz-t-ci..	sing..	Bosch.	hand.	none..	none..	....	cent..	own....	motor.
G. A. Schacht.....	3½	3,400	168	own...	rol-c.	flex..	s....	36x5s	36x5d	wd..	Bud..	4-4½x5½-28.9	4	cent...	own..	zz-t-ci..	sing..	Bosch.	hand.	none..	none..	....	cent..	own....	motor.
G. A. Schacht.....	5	4,400	168	own...	rol-c.	flex..	s....	36x5s	40x6d	wd..	Bud..	4-4½x5½-28.9	4	cent...	own..	zz-t-ci..	sing..	Bosch.	hand.	none..	none..	....	l-b...	Dulpex.	motor.
Gem.....	½	675	.....	.....	.....	.....	pnu..	31x4	31x4	....	GBS.	4-3½x4½-22.5	4	ther...	.....	.....	sing..	Conn..	hand.	s&l...	Dynto	....	.....	.....	.....
Geneva.....	¾	.....	96	.....	.....	.....	s....	34x2	36x2½	....	.....	2-5½x4½-22.1	1	.....	.....	.....	sing.	Simms	fix...	.....	.....	....	.....	.....	.....
Gersix.....C	2½	2,500	150*	.....	.....	.....	s....	36x4	36x7	....	Wis.	6-3½x5½-33.8	6	.....	.....	.....	sing.	West..	hand.	s&l...	West..	....	suct..	Mnrch..	motor.
Globe.....A1	1	1,375	132	own...	rol-c.	flex..	s....	34x3½s	34x4s	wd..	Con..	4-3½x5 -19.6	4	cent...	Perf..	.....	sing..	Eismn	fix...	none..	none..	....	cent..	Pierce...	motor.
G.M.C.....16	½	1,395	132	.....	p-stl.	s-flx..	pnu..	35x5s	35x5s	wd..	Con..	4-3½x5 -22.5	4	cent...	McC.	fin-sht..	sing..	Eismn	hand.	opt...	opt...	....	suct..	Mnrch..	motor.
G.M.C.....21	1	1,950	136	.....	p-stl.	s-flx..	opt..	34x3½s	34x5s	wd..	Con..	4-3½x5 -22.5	4	cent...	McC.	fin-cst..	sing..	Eismn	hand.	opt...	opt...	....	suct..	Mnrch..	motor.
G.M.C.....31	1½	2,350	144	.....	p-stl.	s-flx..	s....	36x3½s	36x5s	wd..	Con..	4-3½x5 -22.5	4	cent...	McC.	fin-cst..	sing..	Eismn	hand.	opt...	opt...	....	suct..	Mnrch..	motor.
G.M.C.....41	2	2,690	158	.....	p-stl.	s-flx..	s....	36x4s	36x4d	wd..	Con..	4-4½x5½-27.2	4	cent...	McC.	fin-cst..	sing..	Eismn	hand.	opt...	opt...	....	suct..	Mnrch..	motor.
G.M.C.....71A	3½	3,750	163	own...	rol-c.	s-flx..	s....	36x5s	40x5d	wd..	Con..	4-4½x5½-32.4	2	cent...	McC.	fin-cst..	sing..	Eismn	hand.	.....	.....	....	suct..	Mnrch..	motor.
G.M.C.....101A	5	4,350	163	own...	rol-c.	s-flx..	s....	36x6s	40x6d	wd..	Con..	4-4½x5½-32.4	2	cent...	McC.	fin-cst..	sing..	Eismn	hand.	ltg....	Vesta.	....	suct..	Mnrch..	motor.
Gramm-Bernstein....W	1	1,900	124	.....	p-stl.	s-flx..	s....	34x3½s	34x4s	wd..	Wau..	4-3½x5½-22.5	4	cent...	own..	fin-cst..	sing..	Eismn	hand.	none..	none..	....	cent..	Wau....	motor.
Gramm-Bernstein....W	1½	2,300	130	.....	p-stl.	s-flx..	s....	34x3½s	36x5s	wd..	Wau..	4-3½x5½-22.5	4	cent...	own..	fin-cst..	sing..	Eismn	hand.	none..	none..	....	cent..	Wau....	motor.
Gramm-Bernstein....W	2	2,600	146	.....	p-stl.	s-flx..	s....	34x4s	34x3½s	wd..	Wau..	4-3½x5½-22.5	4	cent...	own..	fin-cst..	sing..	Eismn	hand.	none..	none..	....	cent..	Wau....	motor.
Gramm-Bernstein....W	2½	3,150	156	.....	p-stl.	s-flx..	s....	36x4s	36x4d	wd..	Wau..	4-4½x5½-28.9	2	cent...	own..	fin-cst..	dual..	Eismn	hand.	opt 2..	West..	200	cent..	Wau....	motor.
Gramm-Bernstein....W	3½	3,800	158	.....	p-stl.	s-flx..	s....	36x5s	40x5d	wd..	Wau..	4-4½x5½-32.4	2	cent...	own..	fin-cst..	dual..	Eismn	hand.	opt 2..	West..	200	cent..	Wau....	motor.
Gramm-Bernstein....W	5	4,700	168	.....	p-stl.	s-flx..	s....	36x6s	40x6d	c-s..	Wau..	4-4½x6½-36.1	2	cent...	own..	fin-cst..	dual..	Eismn	hand.	opt 2..	West..	200	cent..	Wau....	motor.
G.V.-Mercedes.....FV	6	.....	192½	.....	.....	.....	s....	34x5	40x6d	....	own..	4-4½x5½₀-29.0	2	pump..	.....	.....	sing..	Bosch.	fix...	.....	.....	....	cent..	own....	motor.
Hahn.....	¾	1,100	120*	Prsh..	.....	.....	s....	36x3	36x3½	....	Con..	4-3½x5 -14.4	4	pump..	.....	.....	sing..	Eismn	hand.	.....	.....	....	cent..	Pierce...	motor.
Hahn.....	1½	1,950	144*	Prsh..	.....	.....	s....	36x3½	36x3½d	....	Con..	4-4½x5½-27.2	....	.....	.....	.....	.....	Bosch.	hand.	.....	.....	....	cent..	Pierce...	motor.
Hahn.....	3½	2,900	148*	Prsh..	.....	.....	s....	36x5	36x5d	....	Con..	4-4½x5½-32.4	....	.....	.....	.....	.....	.....	.....	.....	.....	....	.....	.....	.....
Hall.....	2	2,350	144	own...	rol-c.	.....	s....	36x4s	36x4d	....	Con..	4-4½x5½-27.2	4	pump..	Long.	fin-cst..	sing..	Bsch*	fix...	ltg....	Bosch.	....	suct..	Mnrch..	motor.
Hall.....	3½	3,250	144	own...	rol-c.	.....	s....	36x5s	36x5d	....	Con..	4-4½x5½-32.4	2	pump..	Long.	fin-cst..	sing..	Bsch*	fix...	ltg....	Bosch.	....	suct..	Mnrch..	.....
Hall.....	5	4,200	144	own...	rol-c.	.....	s....	36x5s	36x5d	....	Con..	4-4½x5½-32.4	2	pump..	Long.	fin-cst..	sing..	Bsch*	fix...	opt...	.....	....	suct..	Mnrch..	motor.
Hall.....	5	.....	144	own...	rol-c.	s-flx..	s....	36x5s	40x6d	....	Con..	4-	....	pump..	Long.	fin-cst..	.....	.....	.....	opt...	.....	....	.....	Mnrch..	.....
Harrison.....C	3½	.....	.....	.....	.....	.....	s....	37x5	36x7	....	Con..	4-4½x5 -32.4	....	.....	.....	.....	hand.	Bosch.	.....	.....	.....	....	cent..	own....	motor.
Harrison.....F	3½	.....	.....	.....	.....	.....	s....	37x5	37x5d	....	Con..	4-4½x5 -32.4	....	.....	.....	.....	hand.	Bosch.	.....	.....	.....	....	cent..	own....	motor.
Harvey.....WFA	2½	2,500	150	own...	rol-c.	rigid.	s....	36x4s	36x7s	wd..	Bud..	4-4½x5½-29.0	4	cent...	Chgo	fin-cst..	sing..	Eismn	auto	sl&i...	West..	175	cent..	Duplex.	motor.
Harvey.....WHA	3½	3,250	160	own...	rol-c.	rigid.	s....	36x5s	36x5d	wd..	Bud..	4-4½x6 -32.4	4	gear...	Chgo	fin-cst..	sing..	Eismn	auto	sl&i...	West..	175	.....	Duplex.	motor.
Harvey.....WKA	5	4,000	160	own...	rol-c.	rigid.	s....	36x6s	40x6d	wd..	Bud..	4-4½x6 -32.4	4	gear...	Chgo	fin-cst..	sing..	Eismn	auto	sl&i...	West..	175	cent..	Duplex.	motor.
Harvey Tractor.....HT	7	4,000	125	own...	rol-c.	rigid.	s....	36x5s	36x5d	wd..	Bud..	4-4½x6 -32.4	4	cent...	Chgo	fin-cst..	sing..	Eismn	auto	sl&i...	West..	175	.....	Duplex.	.....
Hawkeye.....J	1½	1,750	146	own...	rol-c.	s-flx..	s....	34x3½s	34x5s	wd..	Bud..	4-3½x5½-22.5	4	ther...	own..	.....	sing..	Eismn	hand.	sl&i2..	West..	175	cent..	Duplex.	dupl.
Hendrickson.....G	2	.....	.....	.....	rol-c.	.....	s....	36x4s	36x4d	wd..	Wau..	4-4½x5½-28.9	2	cent...	Chgo	fin-cst..	sing..	Dixie..	hand.	.....	.....	.....	suct..	Wau....	motor.
Hendrickson.....H	3½	3,000	.....	.....	rol-c.	.....	s....	36x5s	36x5d	wd..	Wau..	4-4½x5½-32.4	2	cent...	Chgo	fin-cst..	sing..	Dixie..	hand.	ltg 2..	.....	22	cent..	Wau....	motor.
Highway Tractor.....A	5	.....	93	.....	rol-c.	rigid.	s....	34x8s	36x4s	wd..	Wei..	4-3½x5½-22.5	4	cent...	Can..	zz-t-ps..	sing..	Eismn	hand.	opt...	opt...	....	.....	.....	.....
Higrade.....A17	¾	.....	115	.....	p-stl.	flex..	pnu..	34x1½s	34x1½s	wd..	Wis..	4-3½x5 -16.9	4	ther...	.....	zz-t-ca..	sing..	Simms	hand.	s&l2..	L-N..	....	.....	Simplex.	dshft.
Hoover.....15B	1	1,375	120	.....	p-stl.	rigid.	pnu..	32x4s	33x4½s	wd..	Con..	4-3½x5 -19.6	4	ther...	Can..	sq-t-sht..	dual..	Dixie..	hand.	none..	none..	....	none	none	none..
Horner.....	1½	2,600	145	.....	rol-c.	rigid.	s....	36x4s	36x4s	wd..	Con..	4-4½x5½-27.2	4	cent...	own..	fin-p-st..	dual..	Bosch.	hand.	ltg....	Vesta.	....	cent..	Mnrch..	.....
Horner.....	2	2,750	145	.....	rol-c.	rigid.	s....	36x4s	36x3½d	wd..	Con..	4-3½x5½-15.6	4	cent...	own..	fin-p-st..	dual..	Bosch.	hand.	ltg....	Vesta.	....	cent..	Mnrch..	.....
Horner.....	3	3,550	145	.....	rol-c.	rigid.	s....	36x5s	40x5d	wd..	Con..	4-4½x5½-32.4	2	cent...	own..	fin-p-st..	dual..	Bosch.	hand.	ltg....	Vesta.	....	suct..	Mnrch..	.....
Horner.....	5	4,750	156	.....	rol-c.	rigid.	s....	38x5s	40x6d	wd..	Con..	4-	2	cent...	own..	fin-p-st..	dual..	Bosch.	hand.	ltg....	Vesta.	....	suct..	Mnrch..	motor.
Hurlburt.....1	1½	2,350	136	.....	p-stl.	rigid.	s....	34x4s	34x5s	wd..	Bud..	4-3½x5½-22.5	4	cent...	own..	cel-sht..	sing..	Dixie..	hand.	ltg....	Vesta.	none	cent..	.....	motor.
Hurlburt.....2	2	3,300	148	.....	p-stl.	rigid.	s....	36x4s	36x4d	wd..	Bud..	4-4½x5½-28.9	4	cent...	own..	fin-t-ci..	dual..	Dixie..	hand.	ltg....	Vesta.	none	cent..	.....	motor.
Hurlburt.....3	3½	3,850	146	.....	p-stl.	rigid.	s....	36x5s	36x5d	wd..	Bud..	4-4½x6 -32.4	4	cent...	own..	fin-cst..	dual..	Dixie..	hand.	ltg....	Vesta.	none	cent..	.....	motor.
Hurlburt.....5	5	4,600	156	.....	p-stl.	rigid.	s....	36x5s	40x6d	wd..	Bud..	6-3½x5½-33.7	4	cent...	own..	fin-cst..	dual..	Dixie..	hand.	ltg....	Vesta.	none	cent..	.....	motor.
Hurlburt.....7	7	5,500	156	.....	p-stl.	rigid.	s....	36x6s	40x7d	wd..	Bud..	6-3½x5½-33.7	4	cent...	own..	fin-cst..	sing..	Dixie..	hand.	ltg....	Vesta.	none	cent..	.....	motor.
I.H.C.....H	¾	1,450	115	P&B..	p-stl.	s-flx..	s*...	36x3½s	36x4s	wd..	own..	4-3½x5½-19.6	4	cent...	M'C*	fin-p-s..	sing..	Dixie..	hand.	s&l...	N-E..	125	cent..	own....	motor.
I.H.C.....F	1	1,750	128	P&B..	p-stl.	s-flx..	s*...	36x3½s	36x4s	wd..	own..	4-3½x5½-19.6	4	cent...	M'C*	fin-p-s..	sing..	Bosch*	hand.	s&l...	N-E..	125	cent..	own....	motor.
I.H.C.....G	2	2,500	135½	P&B..	p-stl.	s-flx..	s*...	36x3½s	36x6s	wd..	own..	4-4 x5 -25.6	4	ther...	M'C*	fin-cst..	sing..	Bosch	hand.	s&l...	N-E..	125	cent..	own....	motor.
Independent.....F	1	1,385	128*	.....	.....	.....	s....	36x3*	36x4*	....	Con..	4-3½x5 -19.6	4	.....	.....	.....	.....	Eismn	fix...	s&l...	Jesco.	....	suct..	Mnrch..	motor.
Independent.....G	2	1,850	144	.....	.....	.....	s....	36x3½	36x5	....	Con..	4-4½x5½-27.2	4	.....	.....	.....	sing..	Eismn	fix...	.....	.....	....	suct..	Mnrch..	motor.
Indiana.....T	1	1,6 0	135	own...	rol-c.	s-flx..	s....	34x3½s	34x4s	wd..	Wau..	4-3½x5½-19.6	4	cent...	Long.	fin-cst..	sing..	Eismn	hand.	.....	.....	....	cent..	Wau....	motor.
Indiana.....D	2	2,350	150	own...	rol-c.	s-flx..	s....	36x4s	36x7s	wd..	Rut..	4-4½x5½-27.2	2	cent...	Long.	fin-cst..	sing..	Bosch.	hand.	.....	.....	....	cent..	Pierce...	motor.
Indiana.....R	3½	3,000	156	own...	rol-c.	s-flx..	s....	36x5s	36x5d	wd..	Wau..	4-4½x5½ 28.9	2	cent...	Lnog.	fin-cst..	sing..	Bosch.	hand.	.....	.....	....	cent..	Wau....	motor.
Indiana.....L	5	4,000	168	own...	rol-c.	s-flx..	s....	36x5s	40x6d	c-s..	Wau..	4-4½x6½-36.1	2	cent...	Long.	sq-t-ci..	dual..	Bosch.	hand.	.....	.....	....	cent..	Wau....	.....
Kearns.....D	½	850e	107	p-stl.	.....	.....	pnu..	30x3½s	30x3½s	wd..	Lyc..	4-3½x5 -16.9	4	ther...	Bush.	p-p-stl..	sing..	Conn..	hand.	sl&i2..	Dyn..	....	.....	none....	.....
Kelly-Springfield...K31	1½	2,500	144*	.....	.....	.....	s*...	36x3½*	36x6*	....	own..	4-3½x5½-22.5	4	pump..	.....	.....	sing..	Eismn	auto	s&l...	R&M..	....	cent..	own....	motor.
Kelly-Springfield...K32	1½	2,500	144*	.....	.....	.....	s*...	36x3½*	36x6*	....	own..	4-3½x5½-22.5	4	pump..	.....	.....	sing..	Eismn	auto	s&l...	R&M..	....	cent..	own....	motor.
Kelly-Springfield...K36	2½	3,000	144*	.....	.....	.....	s*...	36x4*	36x4d*	....	own..	4-3½x5½-22.5	4	pump..	.....	.....	sing..	Eismn	auto	s&l...	R&M..	....	cent..	own....	motor.
Kelly-Springfield...K35	2½	3,000	144*	.....	.....	.....	s*...	36x4*	36x4d*	....	own..	4-3½x5½-22.5	4	pump..	.....	.....	sing..	Eismn	auto	s&l...	R&M..	....	cent..	own....	motor.
Kelly-Springfield...K40	3½	3,850	150*	.....	.....	.....	s*...	38x5*	38x5d*	....	own..	4-4½x6½-32.4	3	pump..	.....	.....	sing..	Eismn	auto	s&l...	R&M..	....	cent..	own....	motor.
Kelly-Springfield...K45	4	4,000	150*	.....	.....	.....	s*...	38x5*	40x6d*	....	own..	4-4½x6½-32.4	2	pump..	.....	.....	sing..	Eismn	auto	s&l...	R&M..	....	cent..	own....	motor.
Kelly-Springfield...K50	5	4,600	150*	.....	.....	.....	s*...	38x6*	40x6d*	....	own..	4-4½x6½-32.4	2	pump..	.....	.....	sing..	Eismn	auto	s&l...	R&M..	....	cent..	own....	motor.
Kelly-Springfield...K60	6	4,750	150*	.....	.....	.....	s*...	38x6*	40x7d*	....	own..	4-4½x6½-32.4	2	pump..	.....	.....	sing..	Eismn	auto	s&l...	R&M..	....	cent..	own....	motor.
King.....	3½	2,800	120	own...	rol-c.	flex..	s....	36x5s	36x5d	wd.	Con..	4-4½x5½-32.4	2	cent...	Liv..	z-z-t-s...	Dual.	Bosch.	2-pt..	none..	none..	....	cent..	Pierce...	motor.

ABBREVIATIONS—Types of Construction

*Other Options
amid—amidships
auto—automatic
c—center
c&l—center and left
c-s—cast steel
cent—centrifugal
cel-cst—cellular core cast case
cel-sht—cellular core sheet case
cylinders cast, 2 in pairs
cylinders cast, 4 in block
cylinders cast, 3 in threes
cylinders cast, 1 singly
d—dual
d-d—dry disk
d-p—dry plate
d-rd—double reduction
elec—electric
ext-dst—external drive-shaft
ext-f-s—external front wheels.
ext-jst—external jack-shaft
ext-r-w—external rear wheel
fab—fabric
fin-sht—finned tube core sheet case
fix—fixed
flex—flexible
fric—friction
grav—gravity
gset—gearset
hyd—hydraulic
ind-c—individual clutch
int-dst—internal drive-shaft
int-f-w—internal front wheels
in-g—internal gear
in-g-4—internal gear drive on 4 wheels
int-r-w—internal rear wheel
jst—unit with jackshaft
l—left
ltg—lighting
metl—metal
mtr—unit with motor
opt—optional
pist—piston pump
plan—planetary
pnu—pneumatic
pres—pressure
prog—progressive sliding gear
p-stl—pressed steel
r—right
r-a—unit with rear axle
ring-cst—ring core cast case
rol-c—rolled channel
rol-l—rolled I-beam
r-rd—radius rods
selec—selective sliding gear
s-flx—semi-flexible
s & l—starting and lighting
s, l & i—starting, lighting and ignition
s, l & i 2—starting, lighting and ignition two-unit
sing—single
s—solid
spgs—springs
sq-t-sht—square tube core sheet case
stk—stock
sub-f—sub-frame
ther—thermo-syphon
tor-a—torque arm
tor-t—torsion tube
vacm—vacuum
wd—wood
w-d—multiple disk in oil
worm—top worm
w-p—wet plate
zz-t-sht—zig-zag tube core sheet case

Prices are exclusive of the 3 per cent. Government war tax

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Commercial Vehicles for 1918—Continued

ENGINE				TRANSMISSION											BRAKES		CONTROL			UNIVERSALS		
SPEED		FUEL SYS.		CLUTCH		GEARSET				FINAL DRIVE							STEERING GEAR					
Motor in R.p.m.	Truck in M.p.h.	Carbureter Make	Fuel Feed	Type	Make	Type	Make	Placed	Speeds	Type	Axle Make	Total Gear Reduction	Propulsion Taken By	Torque Taken By	Springs, Make	Foot	Hand	Placed	Make	Levers	Type	Make	Name and Model
1,275	15	Stmbg*	grav.	d-d...	Fuller..	selec...	Fuller..	mtr...	3	worm.	Shel...	8.75	spgs...	spgs...	Tut....	int-r-w.	int-r-w.	l....	Lavn..	c....	metl ..	Blood..	Gary.....H
1,275	15	Stmbg*	grav.	d-d...	Fuller..	selec...	Fuller..	mtr...	3	worm.	Shel...	8.75	spgs...	spgs...	Tut....	int-r-w.	int-r-w.	l....	Lavn..	c....	metl..	Blood..	Gary.....HU
1,200	12	Stmbg..	grav.	d-d...	Warner	selec...	Warner	amid..	4	worm.	Shel...	8.75	spgs...	spgs...	Tut....	int-r-w.	int-r-w.	l....	Lavn..	c....	metl..	Blood..	Gary.....K
900	16	Schblr..	grav.	cone..	Hart...	selec...	own....	amid..	3	worm.	own....	7.75	r-rd....	tor-a...	Natl...	int-r-w.	ext-r-w.	l....	Brns..	c....	metl..	Blood..	G. A. Schacht.....
900	14	Schblr..	grav.	cone..	Hart...	selec...	own....	amid..	3	worm.	own....	8.66	r-rd....	tor-a...	Natl...	int-r-w.	ext-r-w.	l....	Brns..	c....	metl..	Blood..	G. A. Schacht.....
900	12	Schblr..	grav.	cone..	Hart...	selec...	own....	amid..	3	worm.	own....	10.3	r-rd....	tor-a...	Natl...	int-r-w.	ext-r-w.	l....	Brns..	c....	metl..	Blood..	G. A. Schacht.....
1,000	10	Schblr..	grav.	cone..	Hart...	selec...	own....	amid..	3	worm.	own....	14.0	r-rd....	tor-a...	Natl...	int-r-w.	ext-d-s.	l....	Brns..	c....	metl..	Blood..	G. A. Schacht.....
.....	.....	Carter..	.....	d-d...	GBS...	selec...	G-L....	mtr...	3	bevel..	W-M...	4	spgs...	spgs...	.....	int-r-w.	ext-r-w.	.....	Fost..	.....	.....	.....	Gem.....
.....	18	Schblr..	.....	d-p...	.....	plan...	.....	jst....	2	chn...	.....	.....	r-rd....	.....	.....	.....	.....	.....	.....	.....	.....	Spicer..	Geneva.....1
1,050	13	Rayfld.	vacm..	d-p...	B-Beck.	id-c....	Cotta..	mtr...	3	worm.	Emp...	8.6	spgs...	spgs...	.....	int-r-w.	ext-r-w.	.....	Ross..	.....	.....	.....	Gersix.....C
1,383	20	Master.	vacm..	d-p...	B-Beck.	selec...	Covert.	mtr...	3	in-g...	Celfr...	7.0	spgs...	spgs...	Shel...	int-r-w.	ext-r-w.	l....	Lavn..	c....	.....	.....	Globe.....A1
1,150	20	Marvel.	grav.	d-d...	own....	selec...	own....	mtr...	3	bevl..	W-M...	6.0	r-rd....	spgs...	W-M...	int-r-w	ext-r-w	l....	Jacx..	c....	metl..	Univ...	G.M.C.....16
1,380	18	Marvel.	grav.	d-d...	own....	selec...	own....	mtr...	3	worm.	Timkn.	7.75	r-rd....	spgs...	Dtrt...	int-r-w.	int-r-w.	l....	Lavn..	c....	metl..	Univ...	G.M.C.....21
1,300	15	Marvel.	grav.	d-d...	own....	selec...	own....	mtr...	4	worm.	Timkn.	9.25	r-rd....	spgs...	Dtrt...	int-r-w.	int-r-w.	l....	Lavn..	c....	metl..	Univ...	G.M.C.....31
1,210	14	Marvel.	grav.	d-d...	own....	selec...	own....	mtr...	4	worm.	Timkn.	19.25	r-rd....	spgs...	Dtrt...	int-r-w.	int-r-w.	l....	Lavn..	c....	metl..	Univ...	G.M.C.....41
1,210	12	Marvel.	grav.	d-d...	own....	selec...	own....	amid..	4	worm.	Timkn.	12.0	r-rd....	spgs...	Dtrt...	int-r-w.	int-r-w.	l....	Lavn..	c....	metl..	Univ...	G.M.C.....71A
1,150	10	Marvel.	grav.	d-d...	own....	selec...	own....	amid..	4	worm.	Timkn.	13.7	r-rd....	spgs...	Dtrt...	int-r-w.	int-r-w.	l....	Lavn..	c....	metl..	Univ...	G.M.C.....101A
1,300	20	Zenith..	grav.	d-d...	own....	mesh...	own....	amid..	3	worm.	Shel...	6.5	spgs...	spgs...	Shel...	int-r-w.	int-r-w.	l....	Ross..	c....	.....	.....	Gramm-Bernstein....W
1,200	17	Zenith..	grav.	d-d...	own....	mesh...	own....	amid..	3	worm.	Shel...	7.75	spgs...	spgs...	Shel...	ext-r-w.	int-r-w.	l....	Ross..	c....	.....	.....	Gramm-Bernstein....W
1,200	16	Zenith..	grav.	d-d...	own....	mesh...	own....	amid..	3	worm.	Shel...	8.66	spgs...	spgs...	Shel...	ext-r-w.	int-r-w.	l....	Ross..	c....	.....	.....	Gramm-Bernstein....W
1,150	16	Zenith..	grav.	d-d...	own....	mesh...	own....	amid..	3	worm.	Shel...	7.75	spgs...	spgs...	Shel...	int-r-w.	int-r-w.	l....	Ross..	c....	.....	.....	Gramm-Bernstein....W
1,100	16	Zenith..	grav.	d-d...	own....	mesh...	own....	amid..	4	worm.	Shel...	.....	spgs...	spgs...	Shel...	int-r-w.	int-r-w.	l....	Ross..	c....	.....	.....	Gramm-Bernstein....W
1,050	11	Zenith..	grav.	cone..	own....	mesh...	own....	amid..	4	worm.	Shel...	9.5	spgs...	spgs...	Shel...	int-r-w.	int-r-w.	l....	Ross..	c....	.....	.....	Gramm-Bernstein....W
850	10	own....	.....	cone..	.....	selec...	.....	amid..	4	in-g...	.....	9.3	r-rd....	tor-a...	.....	ext-r-w.	ext-sht.	.....	.....	.....	.....	.....	G.V.-Mercedes.....FV
1.175	18	Stmbg..	grav.	d-d...	B-Lipe.	selec...	B-Lipe.	mtr...	3	worm.	Torb...	7.0	spgs...	spgs...	.....	int-r-w.	ext-r-w.	.....	Lavn..	.....	metl..	Spicer..	Hahn.....
980	15	Stmbg..	grav.	d-d...	B-Lipe.	selec...	B-Lipe.	mtr...	3	worm.	Timkn.	7.0	r-rd....	tor-a...	.....	.....	.....	.....	Ross..	.....	metl..	Spicer..	Hahn.....
.....	.....	.....	.....	.....	B-Lipe.	.....	B-Lipe.	.....	.....	.....	Timkn.	.....	.....	.....	.....	.....	.....	.....	Ross..	.....	metl..	Spicer.	Hahn.....
.....	18	Zenith..	grav.	m-d...	B-Beck.	selec...	Covert.	mtr...	3	.....	Timkn.	.....	spgs...	spgs...	Dtrt...	int-r-w.	int-r-w.	l....	Gem..	c....	metl..	K-B..	Hall.....
.....	15	Zenith..	grav.	d-d...	B-Beck.	selec...	B-Lipe.	mtr...	3	.....	Timkn	.....	spgs...	spgs...	Dtrt...	int-r-w.	int-r-w.	l....	Gem..	c....	metl..	K-B..	Hall.....
.....	12	Zenith..	grav.	d-d...	B-Lipe.	selec...	B-Lipe.	mtr...	4	.....	Timkn.	.....	spgs...	spgs...	Dtrt...	int-r-w.	int-r-w.	l....	Gem..	c....	metl..	K-B..	Hall.....
.....	.....	Zenith..	.....	d-d...	B-Lipe.	selec...	B-Lipe.	jst....	3	.....	Timkn.	.....	spgs...	spgs...	Dtrt...	int-r-w.	int-r-w.	l....	Gem..	c....	metl..	K-B..	Hall.....
1,025	12	Schblr..	grav.	cone..	own....	selec...	Roch..	jst....	3	chn...	own....	9.4	r-rd....	.....	.....	int-r-w.	ext-r-w.	.....	own..	.....	.....	.....	Harrison.....C
1,000	12	Schblr..	grav.	cone..	own....	selec...	B-Lipe.	jst....	3	chn...	Timkn.	9.6	r-rd....	.....	.....	int.	ext.	.....	Ross..	.....	.....	.....	Harrison.....F
1,000	16	Stmbg..	grav.	d-p...	B-Beck.	selec...	B-Lipe.	amid..	4	worm.	Shel...	7.75	spgs...	spgs...	Shel...	int-r-w.	int-r-w.	l....	Ross..	c....	metl..	Spicer..	Harvey.....WFA
1,000	13	Stmbg..	grav.	d-p...	B-Beck.	selec...	B-Lipe.	amid..	4	worm.	Shel...	8.75	spgs...	spgs...	Shel...	int-r-w.	int-r-w.	l....	Ross..	c....	metl..	Spicer..	Harvey.....WHA
1,000	11	Stmbg..	grav.	d-p...	B-Beck.	selec...	B-Lipe.	amid..	4	worm.	Shel...	8.75	spgs...	spgs...	Shel...	int-r-w.	int-r-w.	l....	Ross..	c....	metl..	Spicer..	Harvey.....WKA
1,000	11	Stmbg..	grav.	d-p...	B-Beck.	selec...	B-Lipe.	amid..	4	worm.	Shel...	8.75	spgs...	spgs...	Shel...	int-r-w.	int-r-w.	l....	Ross..	.....	metl..	Spicer..	Harvey Tractor.....HT
.....	15	Master.	vacm..	d-p...	B-Beck.	selec...	G-Lees.	mtr...	3	in-g...	Celfr...	7.0	spgs...	spgs...	Tut....	int-r-w.	ext-r-w.	l....	Lavn..	l....	metl..	Univ..	Hawkeye.....J
1,000	15	Stmbg..	grav.	d-d...	Fuller..	.....	Fuller..	mtr...	.....	worm.	Timkn.	7.75	r-rd....	tor-a...	Tut....	ext-r-w.	ext-r-w.	l....	Ross..	c....	.....	.....	Hendrickson.....G
1,100	14	Stmbg..	grav.	d-d...	B-Beck.	prog...	Cotta..	mtr...	3	worm.	Timkn.	10.3	r-rd....	spgs...	Tut....	int-r-w.	int-r-w.	l....	Ross..	r....	.....	.....	Hendrickson.....H
.....	.....	Schblr..	grav.	d-d...	B-Beck.	selec...	Warner	mtr...	2	in-g...	own....	13.4	tor-a...	tor-a...	.....	ext-r-w.	int-f-w.	c....	own..	r....	.....	.....	Highway Tractor.....A
1,000	20	Zenith..	grav.	d-p...	B-Beck.	mesh...	Cotta..	mtr...	3	worm.	Shel...	4.5	spgs...	spgs...	.....	int-r-w.	int.	l....	Lavn..	c*...	metl..	Blood..	Higrade.....A17
.....	.....	Schblr..	vacm..	d-d...	Fuller..	selec...	Fuller..	mtr...	3	worm.	Shel...	6.5	spgs...	spgs...	Shel...	int-r-w.	int-r-w.	l....	Lavn..	c....	.....	.....	Hoover.....15B
.....	.....	Master.	grav.	d-d...	B-Lipe.	selec...	B-Lipe.	amid..	3	worm.	Timkn.	.....	r-rd....	spgs...	Perf...	.....	int.	l....	Ross..	c....	.....	.....	Horner.....
.....	.....	Master.	grav.	d-d...	B-Lipe.	selec...	B-Lipe.	amid..	3	worm.	Timkn.	.....	r-rd....	spgs...	Perf...	ext-r-w.	ext-r-w.	l....	Ross..	c....	.....	.....	Horner.....
.....	.....	Master.	grav.	d-d...	B-Lipe.	selec...	B-Lipe.	amid..	3	worm.	Timkn.	.....	r-rd....	spgs...	Perf...	int-r-w.	int-r-w.	l....	Ross..	c....	.....	.....	Horner.....
.....	.....	Master.	grav.	d-d...	B-Lipe.	selec...	B-Lipe.	amid..	3	worm.	Timkn.	.....	r-rd....	spgs...	Perf...	int-r-w.	int-r-w.	l....	Ross..	c....	.....	.....	Horner.....
1,375	18	Shkspr.	grav.	d-d...	B-Lipe.	selec...	B-Lipe.	mtr...	3	worm.	own....	6.25	spgs...	spgs...	Merl...	ext-r-w.	int-r-w.	l....	Lavn..	c....	.....	.....	Hurlburt.....1
1,300	16	Shkspr.	grav.	d-d...	B-Lipe.	selec...	B-Lipe.	mtr...	3	worm.	own....	8.66	r-rd....	tor-a...	Merl...	ext-d-s.	int-r-w.	l....	Lavn..	c....	.....	.....	Hurlburt.....2
1,050	13	Shkspr.	grav.	d-d...	B-Lipe.	selec...	B-Lipe.	mtr...	3	worm.	own....	8.66	r-rd....	tor-a...	Merl...	ext-d-s.	int-r-w.	l....	Lavn..	c....	.....	.....	Hurlburt.....3
1,360	12	Shkspr.	grav.	d-d...	B-Lipe.	selec...	B-Lipe.	mtr...	4	worm.	own....	10.3	r-rd....	tor-a...	Merl...	ext-d-s.	int-r-w.	l....	Lavn..	c....	.....	.....	Hurlburt.....5
1,360	12	Shkspr.	grav.	d-d...	B-Lipe.	selec...	B-Lipe.	amid..	4	worm.	own....	13.0	r-rd....	tor-a...	Merl...	int-d-s..	int-r-w.	l....	Lavn..	c....	.....	.....	Hurlburt.....7
1,275	17	Holley..	grav.	d-d...	own....	selec...	own....	amid..	3	in-g...	own....	7.0	spgs...	spgs...	Perf...	int-r-w.	int-f-w.	l....	Ross..	c....	.....	own....	I.H.C.....H
1,275	17	Holley..	grav.	d-d...	own....	selec...	own....	amid..	3	in-g...	own....	8.0	spgs...	spgs...	Perf...	int-r-w.	int-f-w.	l....	Ross..	c....	.....	own....	I.H.C.....F
1,100	11½	Ensign.	vacm..	d-d...	own....	selec...	own....	amid..	3	in-g...	own....	8.0	spgs...	spgs...	Perf...	int-r-w.	int-r-w.	l....	Ross..	c....	.....	own....	I.H.C.....G
1,350	.....	Marvel.	grav.	d-d...	B-Lipe.	selec...	B-Lipe.	mtr...	3	worm.	.....	.....	spgs...	spgs...	.....	int-r-w.	int-r-w.	.....	Lavn..	.....	.....	.....	Independent.....F
.....	.....	Marvel.	grav.	d-d...	.....	selec...	.....	mtr...	3	worm.	.....	.....	spgs...	spgs...	.....	int-r-w.	int-r-w.	.....	.....	.....	.....	.....	Independent.....G
1,080	15	Stmbg..	grav.	d-p...	B-Beck.	selec...	Covert.	amid..	3	worm.	own....	7.0	spgs...	spgs...	Kal....	int-r-w.	int-r-w.	l....	Lavn..	c....	metl..	Arvac..	Indiana.....T
1,375	20	Stmbg..	grav.	d-p...	B-Beck.	selec...	Covert.	amid..	3	worm.	Shel...	7.75	r-rd....	spgs...	Kal....	int-r-w.	int-r-w.	l....	Lavn..	c....	metl..	Acme..	Indiana.....D
1,150	12	Stmbg..	grav.	d-p...	B-Beck.	selec...	B-Lipe.	amid..	4	worm.	Shel...	15.4	r-rd....	spgs...	Shel...	int-r-w.	int-r-w.	l....	Lavn..	c....	metl..	Acme..	Indiana.....R
800	11	Stmbg..	grav.	d-p...	B-Beck.	selec...	B-Lipe.	amid..	4	worm.	Shel...	8.75	r-rd....	spgs...	Shel...	int-r-w.	int-r-w.	l....	Lavn..	c....	metl..	Spicer..	Indiana.....L
.....	.....	Carter..	grav.	d-d...	Mech..	selec...	Mech..	mtr...	3	bev...	Peru....	.....	spgs...	.....	Lig....	.....	.....	l....	Lavn..	c....	.....	.....	Kearns.....D
1,200	15	Rayfld.	grav.	cone..	own....	selec...	Covert.	amid..	3	chn...	.....	.....	r-rd....	.....	.....	int-r-w.	int-r-w.	.....	Gem..	.....	.....	.....	Kelly-Springfield....K31
1,200	15	Rayfld.	grav.	cone..	own....	selec...	Covert.	amid..	3	worm.	own....	.....	r-rd....	spgs...	.....	int-r-w	int-r-w	.....	Gem..	.....	.....	.....	Kelly-Springfield....K32
1,200	11	Rayfld.	grav.	cone..	own....	selec...	Covert.	amid..	3	worm.	own....	.....	r-rd....	spgs...	.....	int-r-w.	int-r-w.	.....	Gem..	.....	.....	.....	Kelly-Springfield....K36
1,200	11½	Rayfld.	grav.	cone..	own....	selec...	Covert.	amid..	3	chn...	.....	.....	r-rd....	.....	.....	int-r-w.	int-r-w.	.....	Gem..	.....	.....	.....	Kelly-Springfield....K35
1,100	12	Rayfld.	grav.	cone..	own....	selec...	Covert.	amid..	3	chn...	.....	.....	r-rd....	.....	.....	int-r-w.	int-r-w.	.....	Gem..	.....	.....	.....	Kelly-Springfield....K40
1,100	12	Rayfld.	grav.	cone..	own....	selec...	Covert.	amid..	3	chn...	.....	.....	r-rd....	.....	.....	int-r-w.	int-r-w.	.....	Gem..	.....	.....	.....	Kelly-Springfield....K45
1,100	10½	Rayfld.	grav.	cone..	own....	selec...	Covert.	amid..	3	chn...	.....	.....	r-rd....	.....	.....	int-r-w.	int-r-w.	.....	Gem..	.....	.....	.....	Kelly-Springfield....K5
1,100	10½	Rayfld.	grav.	cone..	own....	selec...	Covert.	amid..	3	chn...	.....	.....	r-rd....	.....	.....	.....	.....	.....	Gem..	.....	.....	.....	Kelly-Springfield....K6
1,000	12	Schblr..	grav.	d-d...	own....	mesh...	Cotta..	jsh....	3	chn...	own....	8.66	r-rd....	s-fm...	Perf...	int-r-w.	ext-j-s.	r....	Ross..	r....	metl..	Blood..	King.....

ABBREVIATIONS—Makers of Parts

*Other Options
A-K—Atwater Kent
Aut-L—Auto-Lite
B-Beck—Borg & Beck
B-Lipe—Brown-Lipe
Blng—Berling
Brm—Bremer
Bud—Buda
Can—Candler
Celfr—Celfor
Chgo—Chicago
Con—Continental
Conn—Connecticut
Dtrt—Detroit
Dynt—Dyneto
Eisnn—Eisemann
E-M—English & Mersick
Eur—Eureka
Fed—Fedders
Franck—Francke
GBS—Golden, Belknap & Swartz
G&O—G & O Mfg. Co.
G-C—Garden City
Gem—Gemmer
Har—Harrison
Hart—Hartford
Hays—Hayes
Hig—Higgins
H-Shaw—Hele-Shaw
H-S—Herschell-Spillman
Idl—Ideal
Iron—Iron City
Jacx—Jackson-Church-Wilcox
Jhnson—Johnson
Kal—Kalamazoo
K-B—Kinsler-Bennett
Key-H—Keystone-Hindley
Lavn—Lavigne
LeR—LeRoi
Lgt—Light
Ligt—Liggett
Lyc—Lycoming
M'C—McCord
Merl—Merrill
Mil—Milwaukee
March—Monarch
Mthr—Mather
Natl—National
N. A.—North American
P & B—Parish & Bingham
Perf—Perfection
Prsh—Parish
R-T—Rome-Turney
Rayfld—Rayfield
Rowl—Wm. Harvey Rowland
Russl—Russel
Rut—Rutenber
Salsby—Salisbury
Savg—Savage Arms
Schblr—Schebler
Shel—Sheldon
Shkspr—Shakespeare
Smth—A. O. Smith
S-P—Spring-Perch
Spltf—Splitdorf
Stewrt—Stewart
Stmbg—Stromberg
Sundmn—Sunderman
S-W—Sparks-Withington
Ther—Thermoid
Timkn—Timken
Torb—Torbenson
Tut—Tuthill
Univ—Universal Machine Co.
Wau—Waukesha
Wilcx—Wilcox
Wis—Wisconsin

Prices are exclusive of the 3 per cent Government war tax

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Technical Specifications of Gasoline

Name and Model	Tons Capacity	Chassis Price	Wheelbase, Inches	FRAME			TIRES			Wheels	ENGINE													GOVERNOR		
								Sizes in Ins.						COOLING			IGNITION			ELEC. SYSTEM						
				Make	Material	Type	Kind	Front	Rear		Make	No. Cyl. Bore and Stroke—N.A.C.C., Hp.	Cylinders Cast	Water Circ.	Radiator Make	Radiator Core and Case	Type	Make	Spark Advance	Type	Make	Extra Cost	Type	Make	Drive
Kissel	½	1,185	135	.....	.....	.....	pnu..	32x4	32x4	....	own..	4-3½x5½-24.0	4	pump..	.....	.....	.....	Eismn	hand.	s&l*..	.....	....	cent..	Pierce...	motor.
Kissel	1½	1,585	152	.....	.....	.....	s....	34x3	34x5	....	own..	4-3½x5½-24.0	4	pump..	.....	.....	.....	Eismn	hand.	s&l*..	.....	....	cent..	Pierce...	motor.
Kissel	2	2,275	168	.....	.....	.....	s....	34x4	36x7	....	own..	4-4½x5½-28.9	4	pump..	.....	.....	.....	Eismn	hand.	s&l*..	.....	....	cent..	Pierce...	motor.
Kissel	3½	3,150	168	.....	.....	.....	s....	36x5	36x5d	....	own..	4-4½x5½-28.9	4	pump..	.....	.....	.....	Eismn	hand.	s&l*..	.....	....	cent..	Pierce...	motor.
Kleiber	AA	1	2,100	130	.....	rol-c.	s-flx.	s....	34x3½s	34x5s	wd..	Con..	4-3½x5½-22.5	4	cent...	Perf..	z-z-t-s...	dual..	Bosch.	hand.	.....	.....	.....	cent..	Pierce...	motor.
Kleiber	A	1½	2,500	140	.....	rol-c.	s-flx.	s....	36x3½s	36x6s	wd..	Con..	4-4½x5½-27.2	4	cent...	Perf..	z-z-t-s...	dual..	Bosch.	hand.	.....	.....	.....	cent..	Pierce...	motor.
Kleiber	BB	2	2,750	140	.....	rol-c.	s-flx.	s....	36x4s	36x7s	wd..	Con..	4-4½x5½-27.2	4	cent...	Perf..	z-z-t-s...	dual..	Bosch.	hand.	.....	.....	.....	cent..	Pierce...	motor.
Kleiber	B	2½	3,200	150	.....	rol-c.	s-flx.	s....	36x4s	36x4d	wd..	Con..	4-4½x5½-32.4	2	cent...	Perf..	z-z-t-s...	dual..	Bosch.	hand.	.....	.....	.....	cent..	Pierce...	motor.
Kleiber	C	3½	3,850	160	.....	rol-c.	s-flx.	s....	36x5s	36x5d*	wd..	Con..	4-4½x5½-32.4	2	cent...	Perf..	z-z-t-s...	dual..	Bosch.	hand.	.....	.....	.....	cent..	Pierce...	motor.
Kleiber	D	5	4,900	170	.....	rol-c.	s-flx.	s....	36x6s	40x6d	wd..	Con..	4-5½x5½-44.2	2	cent...	Perf..	z-z-t-s...	dual..	Bosch.	hand.	.....	.....	.....	cent..	Pierce...	motor.
Knox	35	.....	4,500	108½	.....	rol-c.	rigid.	s....	36x5s	38x6d	c-s..	own..	4-5x5½-40.0	2	cent...	Fed..	cel-sht...	sing..	Eismn	hand.	s&l2..	Bijur.	.....	none.	none	.....
Knox	36	3	5,000	108½	.....	rol-c.	rigid.	s....	36x4s	38x6d*	c-s..	own..	4-5x5½-40.0	2	cent...	Fed..	cel-sht...	sing..	Eismn	hand.	s&l2..	Bijur.	.....	none.	none	none..
Koehler	K	1½	1,150	129	own..	rol-c.	.....	s....	34x3s	34x4s	wd..	own..	4-3½x5 -19.6	4	ther....	own..	fin-cst...	sing..	Eismn	hand.	.....	.....	.....	.....	.....	.....
Koehler Tractor	KT	3	1,550	106	own..	rol-c.	rigid.	s....	34x3s	34x5s	wd..	own..	4-3½x5 -19.6	4	ther....	own..	fin-cst...	sing..	Eismn	fix...	.....	.....	.....	.....	Mnrch.	.....
Lambert	V2	1	1,700	144	.....	.....	.....	s....	36x3½	36x4	....	Rut..	4-4½x5½-29.0	1	.....	.....	.....	sing*.	Rem*.	hand.	l&i...	Vesta.	....	cent..	Pierce...	motor.
Lamson	1½	1,850	150*	.....	.....	.....	s....	36x3½	36x5	....	Wis..	4-4 x5 -25.6	4	.....	.....	.....	dual..	Bosch.	hand.	l&i...	Vesta.	....	cent..	Simplex.	.....
Lamson	2½	2,450	160*	.....	.....	.....	s....	36x4	36x7	....	Wis..	4-4 x6 -25.6	4	.....	.....	.....	dual..	Bosch.	hand.	l&i...	Vesta.	....	cent..	Simplex.	.....
Lamson	3½	3,150	170*	.....	.....	.....	s....	36x5	40x5d	....	Wis..	4-4½x5½-36.2	2	.....	.....	.....	dual..	Bosch.	hand.	l&i...	Vesta.	....	cent..	Simplex.	.....
Lamson	5	4,150	180*	.....	.....	.....	s....	36x6	40x6d	....	Wis..	4-5½x5½-41.6	2	.....	.....	.....	dual..	Bosch.	hand.	s&l...	.....	.....	cent..	Simplex.	.....
Lane	F	1½	1,750	135	own..	rol-c.	rigid.	s....	34x3½s	34x4s	wd..	Con..	4-3½x5 -19.6	4	ther....	own..	fin-cst...	sing..	Conn..	hand.	sl&i2..	Roth..	none	cent.	Pierce...	motor.
Lane	B	2½	2,500	150	own..	rol-c.	rigid.	s....	34x4s	36x6s	wd..	Con..	6-3½x5½-29.4	4	cent...	own..	fin-cst...	sing..	Conn..	hand.	sl&i2..	Eoth..	none	cent.	Pierce...	motor.
Lane	C	3½	3,250	160	own..	rol-c.	rigid.	s....	36x5s	36x5d	wd..	Con..	6-3½x5½-33.7	3	cent...	own..	fin-cst...	sing..	Conn..	hand.	sl&i2..	Roth..	none	cent.	Pierce...	motor.
Lange	C	1½	1,950	136	.....	rol-c.	rigid.	s....	36x4s	38x6s	wd..	Con..	4-4½x5½-27.2	4	ther....	Fed..	sq-t-sht..	sing..	Bosch.	hand.	.....	.....	.....	cent..	Pierce...	motor.
Lange	B	2½	2,650	136	.....	rol-c.	rigid.	s....	36x4s	38x6s	wd..	Con..	4-4½x5½-27.2	4	ther....	Fed..	sq-t-sht..	sing..	Bosch.	hand.	none..	none..	none	cent.	Pierce...	motor.
Lapeer	A	3	1,500	90	.....	rol-c.	s-flx.	s....	32x3½s	32x5s	wd..	Wau..	4-3½x5 -19.6	4	cent....	Can..	cel-cst...	sing..	Splf..	fix...	none..	none..	.....	cent..	Wau...	motor.
Lapeer	C	5	1,900	90	.....	rol-c.	s-flx.	s....	32x3½s	32x3½d	wd..	Wau..	4-3½x5½-19.6	4	cent...	Can..	cel-cst...	sing..	Splf..	fix...	none..	none..	.....	cent..	Wau...	motor.
Larrabee	M	1	1,800	130	Prsh..	p-stl.	flex..	s....	34x3½s	34x5s	wd..	Con..	4-3½x5 -22.5	4	ther....	Bush.	fin-cst...	sing..	Bosch.	hand.	none..	none..	.....	cent..	Pierce...	motor.
Larrabee	N	1½	2,000	140	Prsh..	p-stl.	flex..	s....	36x3½s	36x5s	wd..	Con..	4-4½x5½-27.2	4	cent...	Bush.	fin-cst...	sing..	Bosch.	hand.	none..	none..	.....	cent..	Pierce...	motor.
Larrabee	O	2½	2,700	154	Prsh..	p-stl.	flex..	s....	36x4s	36x7s	wd..	Con..	4-4½x5½-27.2	4	cent...	Bush.	fin-cst...	sing..	Bosch.	hand.	none..	none..	.....	cent..	Pierce...	motor.
Larrabee	R	3½	3,400	154	Prsh..	p-stl.	flex..	s....	36x5s	36x5s	wd..	Con..	4-4½x5½-32.4	4	cent...	Bush.	fin-cst...	sing..	Bosch.	hand.	none..	none..	.....	cent..	Pierce...	motor.
Lawson	35	½	.....	112	.....	.....	.....	pnu..	31x4	31x4	....	GBS.	4-3½x4½-22.5	4	.....	.....	.....	sing..	Dixie..	hand.	s&l...	.....	.....	.....	.....	.....
Lippard-Stewart	MW	½	1,025	106	P&B..	p-stl.	flex..	pnu..	33x4s	33x4s	wd..	Wis..	4-3½x5 -16.9	4	ther....	Mayo	cel-sht...	sing..	Eismn	fix...	opt..	Remy.	.....	.....	.....	.....
Lippard-Stewart	W	½	1,750	125	P&B..	p-stl.	s-flx.	opt..	34x3s*	34x4s*	wd..	Con..	4-3½x5½-22.5	4	cent...	Fed..	cel-sht...	sing..	Eismn	fix...	opt..	Dynt..	.....	cent..	Pierce...	motor.
Lippard-Stewart	HW	1	2,000	135	P&B..	p-stl.	s-flx.	s....	36x3s	36x5s	wd..	Con..	4-3½x5½-22.5	4	cent...	Fed..	cel-cst...	sing..	Eismn	fix...	s&l..	Dynt..	.....	cent..	Pierce...	motor.
Lippard-Stewart	F	1½	2,450	158	P&B..	p-stl.	s-flx.	s....	36x3½s	36x3d	wd..	Con..	4-4½x5½-27.2	4	cent...	Fed..	cel-cst...	sing..	Eismn	fix...	s&l..	Dynt..	.....	cent..	Pierce...	motor.
Lippard-Stewart	G	2	2,700	165	P&B..	p-stl.	.....	s....	36x4s	36x4d	wd..	Con..	4-4½x5½-27.2	4	cent...	Fed..	cel-cst...	sing..	Eismn	fix...	s&l..	Dynt..	.....	cent..	Pierce...	motor.
Little Giant	15	¼	1,500	138	.....	.....	.....	p*..	34x4	34x3½	....	.....	4-3½x5 -19.6	4	.....	.....	.....	sing..	Eismn	hand.	.....	.....	.....	.....	.....	.....
Little Giant	H	1	1,400	110	.....	.....	.....	s....	36x3	36x3½	....	Con..	4-3½x5½-19.6	4	.....	.....	.....	sing..	Eismn	hand.	.....	.....	.....	.....	.....	.....
Little Giant	H	1½	1,500	110	.....	.....	.....	s....	36x3½	36x4	....	Bud..	4-3½x5½-19.6	4	.....	.....	.....	sing..	Eismn	hand.	.....	.....	.....	.....	.....	.....
Little Giant	16	2	2,500	144	.....	.....	.....	s....	36x4	36x6	....	Con..	4-4½x5½-27.2	4	.....	.....	.....	sing..	Eismn	hand.	.....	.....	.....	.....	.....	.....
Lumb	C	2½	1,900	148	.....	rol-c.	.....	opt..	.....	.....	wd..	Bud..	4-4½x5½-28.9	4	cent...	Chgo	fin-cst...	sing..	Bosch.	hand.	ltg....	.....	none	suct..	Mnrch.	.....
Maccar	L	1½	2,400	150	Prsh..	p-stl.	rigid.	s....	36x4s	36x5s	wd..	Con..	4-4½x5½-27.2	4	cent....	Bush.	fin-sht...	sing..	Bosch.	hand.	none..	none..	.....	cent..	Pierce...	motor.
Maccar	H	2½	2,950	162	Prsh..	p-stl.	rigid.	s....	36x4s	36x4d	wd..	Con..	4-4½x5½-32.4	2	cent....	own..	fin-cst...	sing..	Bosch.	hand.	none..	none..	.....	cent..	Pierce...	motor.
Maccar	M	3½	3,600	174	Prsh..	p-stl.	rigid.	s....	37x5s	37x5d	wd..	Con..	4-4½x5½-32.4	2	cent....	own..	fin-cst...	sing..	Bosch.	hand.	none..	none..	.....	cent..	Pierce...	motor.
Maccar	U	5½	.....	186	Prsh..	p-stl.	rigid.	s....	37x5s	37x5d	wd..	.....	.....	.....	.....	own..	fin-cst...	sing..	Bosch.	hand.	.....	.....	.....	.....	.....	.....
Mack	AB	1	2,400	144*	.....	p-stl.	s-flx.	s....	36x4s	36x3½d	wd..	own..	4-4 x5 -25.6	2	cent....	own..	cel-sht...	sing..	Splf..	hand.	opt..	opt....	.....	cent..	own....	motor.
Mack	AB	1	2,400	144*	.....	p-stl.	s-flx.	s....	36x4s	36x3½d	wd..	own..	4-4 x5 -25.6	2	cent....	own..	cel-sht...	sing..	Splf..	hand.	opt..	opt....	.....	cent..	own....	motor.
Mack	AB	1½	2,800	162*	.....	p-stl.	s-flx.	s....	36x4s	36x3½d	wd..	own..	4-4 x5 -25.6	2	cent....	own..	cel-sht...	sing..	Splf..	hand.	opt..	opt....	.....	cent..	own....	motor.
Mack	AB	1½	2,800	162*	.....	p-stl.	s-flx.	s....	36x4s	36x3½d	wd..	own..	4-4 x5 -25.6	2	cent....	own..	cel-sht...	sing..	Splf..	hand.	opt..	opt....	.....	cent..	own....	motor.
Mack	AB	2	3,000	162*	.....	p-stl.	s-flx.	s....	36x4s	36x4d	wd..	own..	4-4 x5 -25.6	2	cent....	own..	cel-sht...	sing..	Splf..	hand.	opt..	opt....	.....	cent..	own....	motor.
Mack	AB	2	3,000	162*	.....	p-stl.	s-flx.	s....	36x4s	36x4d	wd..	own..	4-4 x5 -25.6	2	cent....	own..	cel-sht...	sing..	Splf..	hand.	opt..	opt....	.....	cent..	own....	motor.
Mack	AC	3½	4,250	180*	.....	p-stl.	s-flx.	s....	36x5s	40x5d	wd..	own..	4-5 x6 -40.0	2	cent....	own..	rng-cst...	.....	Splf..	hand.	opt..	opt....	.....	cent..	own....	motor.
Mack Tractor	AB	5	3,100	120	.....	p-stl.	s-flx.	s....	36x4s	36x4d	wd..	own..	4-4 x5 -25.6	2	cent....	own..	cel-sht...	sing..	Splf..	hand.	opt..	opt....	.....	cent..	own....	motor.
Mack	AC	5½	4,750	180*	.....	p-stl.	s-flx.	s....	36x6s	40x6d	wd..	own..	4-5 x6 -40.0	2	cent....	own..	rng-cst...	.....	Splf..	hand.	opt..	opt....	.....	cent..	own....	motor.
Mack Tractor	AC	7	4,250	119	.....	p-stl.	s-flx.	s....	36x5s	40x5d	wd..	own..	4-5 x6 -40.0	2	cent....	own..	rng-cst...	.....	Splf..	hand.	opt..	opt....	.....	cent..	own....	motor.
Mack	AC	7½	5,000	180*	.....	p-stl.	s-flx.	s....	36x7s	40x7d	wd..	own..	4-5 x6 -40.0	2	cent....	own..	rng-cst...	.....	Splf..	hand.	opt..	opt....	.....	cent..	own....	motor.
Mack Tractor	AC	11	4,750	119	.....	p-stl.	s-flx.	s....	36x6s	40x6d	wd..	own..	4-5 x6 -40.0	2	cent....	own..	rng-cst...	.....	Splf..	hand.	opt..	opt....	.....	cent..	own....	motor.
Mack Tractor	AC	15	5,000	119	.....	p-stl.	s-flx.	s....	36x7s	40x7d	wd..	own..	4-5 x6 -40.0	2	cent....	own..	rng-cst...	.....	Splf..	hand.	opt..	opt....	.....	cent..	own....	mo*or.
Manly	30	1½	2,050	156	.....	p-stl.	flex..	s....	36x4s	36x5s	wd..	.....	4-3½x5½-22.5	4	cent....	.....	p-t-ci...	sing..	Eismn	hand.	s&l..	opt....	.....	cent..	.....	motor.
Manly	40	2	2,250	156	.....	p-stl.	flex..	s....	36x4s	36x6s	wd..	.....	4-3½x5½-22.5	4	cent....	.....	p-t-ci...	sing..	Eismn	hand.	s&l..	opt....	.....	cent..	.....	motor.
Manly	50	2½	2,600	168	.....	p-stl.	flex..	s....	36x4s	40x7s	wd..	.....	4-4 x5½-25.6	2	cent....	.....	p-t-ci...	sing..	Eismn	hand.	s&l..	opt....	.....	cent..	.....	motor.
Manly	60	3	3,000	168	.....	p-stl.	flex..	s....	36x5s	40x8s	wd..	.....	4-4½x5½-28.9	2	cent....	.....	p-t-ci...	sing..	Eismn	hand.	s&l..	opt....	.....	cent..	.....	motor.
Master	M	2	1,990	144	.....	.....	.....	s....	34x4	36x6	....	Bud..	4-4½x5½-28.9	4	.....	.....	.....	sing..	Eismn	fix...	.....	.....	.....	.....	suct..	Mnrch.	.....
Master	3½	2,990	160*	.....	.....	.....	.....	36x5	40x5	....	Bud..	4-4½x5½-27.2	.....	.....	.....	.....	.....	Eismn	.....	.....	.....	.....	.....	.....	.....	.....
Maxfer	1	1,195	130	.....	.....	pnu*.	.....	36x4	34x4	....	.....	4-3½x5 -19.6	....	ther....	.....	.....	.....	.....	hand.	s&l...	Delco.	.....	.....	.....	.....
Maxwell	1	865	124	Hyd..	p-stl.	s-flx..	s....	32x3s	32x4s	wd..	own..	4-3½x4½-21.0	4	ther....	own..	fin-p-s...	sing..	A-K..	hand.	ltg....	A-L..	none	suct..	none....	motor.
Menominee	EW	¾	1,425	124	.....	rol-c.	s-flx..	.....	34x3½s	34x4s	wd..	Con..	4-3½x5 -22.5	4	ther....	Long.	fin-p-s...	sing..	Eismn	hand.	.....	.....	.....	cent..	own....	d-s....
Menominee	FW	1	1,790	130	.....	rol-c.	s-flx..	s....	36x3½s	36x4s	wd..	Con..	4-3½x5½-22.5	4	cent....	Long.	fin-p-s...	sing..	Eismn	hand.	.....	.....	.....	cent..	own....	.....
Menominee	H	1½	2,050	144	.....	rol-c.	s-flx..	s....	36x3½s	36x5s	wd..	Con..	4-3½x5½-22.5	4	cent....	Long.	fin-p-s...	sing..	Eismn	hand.	.....	.....	.....	l-b..	own....	d-s....
Menominee	D	2	2,475	144	.....	rol-c.	s-flx..	s....	36x4s	36x6*	wd..	Con..	4-4½x5½-27.2	2	cent....	R-T..	fin-cst...	sing..	Eismn	hand.	.....	.....	.....	cent..	own....	d-s....
Menominee	G	3½	3,275	160	.....	rol-c.	s-flx..	s....	36x5s	36x5d	wd..	Con..	4-4½x5½-32.4	2	cent....	R-T..	fin-cst...	sing..	Eismn	hand.	.....	.....	.....	cent..	own....	.....
Modern	30	.....	1,800	132	.....	p-stl.	s-flx..	s....	34x3½s	34x5s	wd..	Con..	4-3½x5 -22.5	4	cent....	Long.	fin-cst...	dual..	opt....	fix...	none..	none..	.....	opt..	opt.....	opt...
Moreland	1	1,900	126	.....	p-stl.	s-flx..	s....	34x3½s	34x4s	wd..	Con..	4-3½x5 -22.5	4	ther....	own..	cel-sht...	sing..	Dixie..	hand.	opt...	West..	.....	none.	none....	.....

ABBREVIATIONS—Types of Construction

*Other Options
amid—amidships
auto—automatic
c—center
c&l—center and left
c-s—cast steel
cent—centrifugal
cel-cst—cellular core cast case
cel-sht—cellular core sheet case
cylinders cast, 2 in pairs
cylinders cast, 4 in block
cylinders cast, 8 in threes
cylinders cast, 1 singly
d—dual
d-d—dry disk
d-p—dry plate
d-rd—double reduction
elec—electric
ext-dst—external drive-shaft
ext-f-s—external front wheels.
ext-jst—external jack-shaft
ext-r-w—external rear wheel
fab—fabric
fin-sht—finned tube core sheet case
flx—fixed
flex—flexible
fric—friction
gset—gearset
grav—gravity
hyd—hydraulic
ind-c—individual clutch
in-g—internal gear
in-g-4—internal gear drive on 4 wheels
int-dst—internal drive-shaft
int-f-w—internal front wheels
int-r-w—internal rear wheel
jst—unit with jackshaft
l—left
ltg—lighting
metl—metal
mtr—unit with motor
opt—optional
pist—piston pump
plan—planetary
pnu—pneumatic
pres—pressure
prog—progressive sliding gear
p-stl—pressed steel
r—right
r-a—unit with rear axle
ring-cst—ring core cast case
rol-c—rolled channel
rol-i—rolled I-beam
r-rd—radius rods
selec—selective sliding gear
s-flx—semi-flexible
s & l—starting and lighting
s, l & i—starting, lighting and ignition
s, 1 & i 2—starting, lighting and ignition two-unit
sing—single
s—solid
spgs—springs
sq-t-sht—square tube core sheet case
stk—stock
sub-f—sub-frame
ther—thermo-syphon
tor-a—torque arm
tor-t—torsion tube
vacm—vacuum
wd—wood
w-d—multiple disk in oil
worm—tap worm
w-p—wet plate
zz-t-sht—zig-zag tube core sheet case

Prices are exclusive of the 3 per cent. Government war tax

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Commercial Vehicles for 1918—Continued

ENGINE				TRANSMISSION											BRAKES		CONTROL			UNIVERSALS		
SPEED		FUEL SYS.		CLUTCH		GEARSET				FINAL DRIVE							STEERING GEAR					
Motor R.p.m.	Truck in M.p.h.	Carburetor, Make	Fuel Feed	Type	Make	Type	Make	Placed	Speeds	Type	Axle Make	Total Gear Reduction	Propulsion Taken By	Torque Taken By	Springs, Make	Foot	Hand	Placed	Make	Levers	Type	Make	Name and Model
,060	22	Stmbg..	vacm..	cone..	Warner	selec...	Warner	mtr...	3	bevel..	own....	4.58	spgs...	spgs...	.....	ext-r-w.	ext-r-w.	.....	Jacx..	.....	.....	.....	Kissel
,100	17	Stmbg..	vacm..	d-p...	Warner	selec...	Warner	mtr...	3	worm.	Shel..	6.5	spgs...	spgs...	.....	int-r-w.	int-r-w.	.....	Jacx..	.....	.....	.....	Kissel
,190	15	Stmbg..	vacm..	d-p...	B-Beck.	selec...	Muncie	mtr...	4	worm.	Timkn.	8.5	spgs...	spgs...	.....	int-r-w.	int-r-w.	.....	Lavn..	.....	.....	.....	Kissel
,245	13	Stmbg..	vacm..	d-p...	Warner	selec...	Warner	mtr...	4	worm.	Shel...	10.3	spgs...	spgs...	.....	int-r-w.	int-r-w.	.....	Ross..	.....	.....	.....	Kissel
,300	20	opt....	grav*..	d-d...	B-Lipe.	selec...	B-Lipe.	mtr...	3	worm.	Timkn.	6.7	spgs...	spgs...	Betts..	int-r-w.	int-r-w.	r....	Ross..	c....	.....	.....	Kleiber.....AA
,250	18	opt....	grav*..	m-d...	H-Shaw	selec...	B-Lipe.	amid..	3	worm.	Shel...	7.75	spgs...	spgs...	Betts..	int-r-w.	int-r-w.	r....	Ross..	c....	.....	.....	Kleiber.....A
,250	16	opt....	grav*..	m-d...	H-Shaw	selec...	B-Lipe.	amid..	3	worm.	Timkn.	8.5	spgs...	spgs...	Betts..	int-....	int-....	r....	Ross..	c....	.....	.....	Kleiber.....BB
,200	14	opt....	grav*..	m-d...	H-Shaw	selec...	B-Lipe.	amid..	3	worm.	Shel...	8.75	spgs...	spgs...	Betts..	int-....	int-....	r....	Ross..	c....	.....	.....	Kleiber.....B
,200	12	opt....	grav*..	m-d...	H-Shaw	selec...	B-Lipe.	amid..	4	worm.	Timkn.	10.33	spgs...	spgs...	Betts..	int-....	int-....	r....	Ross..	c....	.....	.....	Kleiber.....C
,150	10	opt....	grav*..	m-d...	H-Shaw	selec...	B-Lipe.	amid..	4	worm.	Timkn.	11.66	spgs...	spgs...	Betts..	int-....	int-....	r....	Ross..	c....	.....	.....	Kleiber.....D
.....	.....	Zenith..	vacm..	d-p...	own....	selec...	own....	jsh....	3	chn...	Timkn.	9.6	r-rd....	.....	Iron...	int-r-w.	ext-j-s.	l....	Ross..	c....	Metl..	K-B...	Knox.....35
.....	.....	Zenith..	vacm..	d-p...	own....	selec...	own....	jsh....	3	chn...	Timkn.	12.0	r-rd....	.....	Iron...	int-r-w.	ext-j-s.	l....	Ross..	c....	Metl..	K-B...	Knox.....36
,400	20	Stmbg..	grav..	d-d...	M&M..	selec...	M&M..	mtr...	3	in-g...	Torb...	7.0	spgs...	spgs...	.....	int-r-w.	ext-r-w.	l....	own...	c....	Metl..	K-B...	Koehler.....K
,400	20	Stmbg..	grav..	d-d...	M&M..	selec...	M&M..	mtr...	3	in-g...	Torb...	7.0	spgs...	spgs...	.....	int-r-w.	ext-r-w.	l....	own...	c....	Metl..	K-B...	Koehler Tractor.....KT
,500	.....	Schblr..	grav..	.....	own....	fric....	.....	chn...	.....	.....	.....	.....	r-rd....	.....	.....	int-....	ext-....	.....	Jacx..	.....	.....	.....	Lambert.....V2
,200	16	Stmbg..	vacm..	d-p...	B-Beck.	id-e....	Cotta..	mtr...	3	worm.	Shel...	7.7	spgs...	spgs...	.....	int-r-w.	ext-r-w.	.....	Ross..	.....	.....	.....	Lamson
,200	14	Stmbg..	vacm..	d-p...	B-Beck.	id-e....	Cotta..	mtr...	3	worm.	Shel...	.....	spgs...	spgs...	.....	int-r-w.	int-r-w.	.....	Ross..	.....	.....	.....	Lamson
,200	12	Stmbg..	vacm..	d-p...	B-Beck.	id-e....	Cotta..	amid..	3	worm.	Shel...	11.7	spgs...	spgs...	.....	int-r-w.	int-r-w.	.....	Ross..	.....	.....	.....	Lamson
,200	10	Stmbg..	vacm..	d-p...	B-Beck.	id-e....	Cotta..	amid..	3	worm.	Shel...	11.7	spgs...	spgs...	.....	int-r-w.	int-r-w.	.....	Ross..	.....	.....	.....	Lamson
,200	18	Stmbg..	vacm..	d-d...	B-Beck.	selec...	Fuller..	mtr...	3	worm.	Wis....	7.2	spgs...	spgs...	Kal....	int-r-w.	ext-f-w.	l....	Lavn..	c....	Metl..	Acme..	Lane.....F
,200	18	Stmbg..	vacm..	d-p...	B-Beck.	selec...	Covert.	amid..	3	worm.	Timkn.	7.75	spgs...	spgs...	Kal....	int-r-w.	int-r-w.	l....	Lavn..	c....	Metl..	Acme..	Lane.....B
,200	12	Stmbg..	vacm..	d-p...	B-Beck.	selec...	Covert.	amid..	3	worm.	Shel...	8.75	spgs...	spgs...	Kal....	int-r-w.	int-r-w.	l....	Lavn..	c....	Metl..	Acme..	Lane.....C
,250	15	Stmbg.	grav..	m-d...	M-Evn.	.....	Cotta..	amid..	3	chn...	.....	9.2	r-rd....	.....	Std....	int-r-w.	ext-d-s.	l....	Gem...	c....	.....	.....	Lange.....C
,250	15	Stmbg.	grav..	m-d...	M-Evn.	.....	Cotta..	amid..	3	chn...	.....	9.2	r-rd....	.....	Std....	int-r-w.	ext-d-s.	l....	.....	c....	.....	.....	Lange.....B
,000	12	Stewrt..	grav..	d-d...	Fuller..	selec...	Fuller..	mtr...	3	in-g...	Torb...	10.0	spgs...	spgs...	Ligt...	int-r-w.	ext-r-w.	l....	Ross..	c....	.....	.....	Lapeer.....A
,000	8	Stewrt..	grav..	d-d...	Fuller..	selec...	Fuller..	mtr...	3	in-g...	Torb...	13.0	spgs...	spgs...	Ligt...	int-r-w.	ext-r-w.	l....	Ross..	c....	.....	.....	Lapeer.....C
,400	18	Schblr..	grav..	d-d...	Fuller..	selec...	Fuller..	mtr...	3	worm.	Shel...	6.5	spgs...	spgs...	Merl...	int-r-w.	int-r-w.	l....	Lavn..	c....	Metl..	Univ...	Larrabee.....M
,200	15	Schblr..	grav..	d-d...	Fuller..	selec...	Fuller..	mtr...	3	worm.	Shel...	7.75	spgs...	spgs...	Merl...	int-r-w.	int-r-w.	l....	Lavn..	c....	Metl..	Univ...	Larrabee.....N
,200	14	Schblr..	grav..	d-d...	Fuller..	selec...	Fuller..	mtr...	3	worm.	Shel...	8.75	spgs...	spgs...	Merl...	int-r-w.	int-r-w.	l....	Lavn..	c....	Metl..	Univ...	Larrabee.....O
,200	17	Schblr..	grav..	d-d...	Muncie	selec...	Muncie	mtr...	4	worm.	Shel...	11.5	spgs...	spgs...	Merl...	int-r-w.	int-r-w.	l....	Lavn..	c....	Metl..	Univ...	Larrabee.....R
.....	.....	Schblr..	grav..	.....	G-Lees.	selec...	G-Lees.	mtr...	3	bevel..	Proe...	4.3	spgs...	spgs...	.....	int-....	ext-....	.....	.....	.....	.....	.....	Lawson.....35
,500	25	Zenith..	grav..	cone..	own....	selec...	Covert.	amid..	3	worm.	Timkn.	5.8	spgs...	spgs...	Mthr...	int-r-w.	int-r-w.	l....	Jacx..	c....	Metl..	Spicer..	Lippard-Stewart....MW
,200	20	Zenith..	grav..	cone..	Hart...	selec...	B-Lipe.	amid..	3	worm.	Timkn.	6.0	spgs...	spgs...	Mthr...	int-r-w.	int-r-w.	l....	Ross..	c....	Metl..	Spicer..	Lippard-Stewart.....W
,180	18	Zenith..	grav..	cone..	Hart...	selec...	B-Lipe.	amid..	3	worm.	Timkn.	7.0	spgs...	spgs...	Mthr...	int-r-w.	int-....	l....	Ross..	c....	Metl..	Spicer..	Lippard-Stewart....HW
,300	18	Zenith..	grav..	cone..	Hart...	selec...	B-Lipe.	amid.	3	worm.	Timkn.	7.75	spgs...	spgs...	Mthr...	int-r-w.	int-....	l....	Ross..	c....	Metl..	Spicer..	Lippard-Stewart.....F
,295	15	Zenith..	grav..	cone..	Hart...	selec...	B-Lipe.	amid.	3	worm.	Timkn.	9.2	spgs...	spgs...	Mthr...	int-r-w.	int-....	l....	Ross..	c....	Metl..	Spicer..	Lippard-Stewart.....G
.....	.....	Schblr..	grav..	d-d...	B-Lipe.	selec...	B-Lipe.	mtr...	3	worm.	Timkn.	6.0	spgs...	spgs...	.....	int-r-w.	int-r-w.	.....	Jacx..	.....	.....	.....	Little Giant.....15
.....	.....	Schblr..	grav..	dsk...	B-Lipe.	.....	B-Lipe.	jst....	3	chn...	Timkn.	6.8	r-rd....	.....	.....	ext-....	ext-....	.....	Jacx..	.....	.....	.....	Little Giant.....H
.....	.....	Schblr..	grav..	dsk...	Hoosir..	selec...	Covert.	jst....	3	chn...	Russl..	6.8	r-rd....	.....	.....	ext-r-w.	ext-j-s.	.....	Jacx..	.....	.....	.....	Little Giant.....H
.....	.....	Schblr..	grav..	d-d...	B-Lipe.	selec...	.....	mtr...	3	worm.	.....	7.7	spgs...	spgs...	.....	int-r-w.	int-r-w.	.....	Ross..	.....	.....	.....	Little Giant.....16
,100	15	Stmbg..	vacm..	d-d...	.....	selec...	.....	mtr...	3	in-g...	.....	.....	.....	spgs...	Shel...	ext-r-w.	int-....	l....	Lavn..	c....	.....	.....	Lumb.....C
,000	16	Stmbg..	grav..	d-d...	B-Lipe.	selec...	B-Lipe.	mtr...	3	worm.	Timkn.	7.0	r-rd....	spgs...	Merl...	int-r-w.	int-r-w.	l....	Ross..	c....	Metl..	Spicer..	Maccar.....L
,000	15	Stmbg..	grav..	d-d...	B-Lipe.	selec...	B-Lipe.	mtr...	3	worm.	Timkn.	7.75	r-rd....	spgs...	Merl...	int-....	int-....	l....	Ross..	c....	Metl..	Spicer..	Maccar.....H
,000	14	Stmbg..	grav..	d-d...	B-Lipe.	selec...	B-Lipe.	mtr...	3	worm.	Timkn.	10.3	r-rd....	spgs...	Merl...	int-r-w.	int-....	l....	Ross..	c....	Metl..	Spicer..	Maccar.....M
.....	.....	.....	grav..	d-d...	B-Lipe.	selec...	B-Lipe.	amid..	4	worm.	Timkn.	11.5	r-rd....	spgs...	Merl...	int-r-w.	int-r-w.	l....	Ross..	c....	Metl..	Spicer..	Maccar.....U
,275	.....	Stmbg*	grav..	d-d...	B-Lipe.	selec...	B-Lipe.	mtr...	4	worm.	Timkn.	7.75	spgs...	spgs...	Mthr...	int-r-w.	int-r-w.	l....	Gem...	c....	.....	.....	Mack.....AB
,275	.....	opt....	grav..	d-d...	B-Lipe.	selec...	B-Lipe.	mtr...	4	chn...	own....	6.29	r-rd....	.....	Mthr...	int-r-w.	int-d-s.	l....	Gem...	c....	.....	.....	Mack.....AB
,275	.....	Stmbg*	grav..	d-d...	B-Lipe.	selec...	B-Lipe.	mtr...	4	worm.	Timkn.	8.5	spgs...	spgs...	Mthr...	int-r-w.	int-r-w.	l....	Gem...	c....	.....	.....	Mack.....AB
,275	.....	Stmbg*	grav..	d-d...	B-Lipe.	selec...	B-Lipe.	mtr...	4	chn...	Timkn.	6.99	r-rd....	.....	Mthr...	int-r-w.	ext-d-s.	l....	Gem...	c....	.....	.....	Mack.....AB
,275	.....	Stmbg*	grav..	d-d...	B-Lipe.	selec...	B-Lipe.	mtr...	4	worm.	Timkn.	8.5	spgs...	spgs...	Mthr...	int-r-w.	int-r-w.	l....	Gem...	c....	.....	.....	Mack.....AB
,275	.....	Stmbg*	grav..	d-d...	B-Lipe.	selec...	B-Lipe.	mtr...	4	chn...	own....	6.99	r-rd....	.....	Mthr...	int-r-w.	ext-d-s.	l....	Gem...	c....	.....	.....	Mack.....AB
,000	.....	Stmbg*	grav..	d-p...	own....	selec...	own....	amid..	3	chn...	own....	7.45	r-rd....	.....	Mthr...	int-r-w.	ext-j-s.	l....	Gem...	c....	.....	.....	Mack.....AC
,275	.....	Stmbg*	grav..	d-d...	B-Lipe.	selec...	B-Lipe.	mtr...	4	chn...	own....	10.5	r-rd....	.....	Mthr...	int-r-w.	ext-d-s.	l....	Gem...	c....	.....	.....	Mack Tractor.....AB
,000	.....	Stmbg*	grav..	d-p...	own....	selec...	own....	amid..	3	chn...	own....	8.4	r-rd....	.....	Mthr...	int-r-w.	ext-j-s.	l....	Gem...	c....	.....	.....	Mack.....AC
,000	.....	Stmbg*	grav..	d-p...	own....	selec...	own....	amid..	3	chn...	own....	10.77	r-rd....	.....	Mthr...	int-r-w.	ext-j-s.	l....	Gem...	c....	.....	.....	Mack Tractor.....AC
,000	.....	Stmbg*	grav..	d-p...	own....	selec...	own....	amid..	3	chn...	own....	11.58	r-rd....	.....	Mthr...	int-r-w.	ext-j-s.	l....	Gem...	c....	.....	.....	Mack.....AC
,000	.....	Stmbg*	grav..	d-p...	own....	selec...	own....	amid..	3	chn...	own....	11.5	r-rd....	.....	Mthr...	int-r-w.	ext-j-s.	l....	Gem...	c....	.....	.....	Mack Tractor.....AC
,000	.....	Stmbg*	grav..	d-p...	own....	selec...	own....	amid..	3	chn...	own....	14.1	r-rd....	.....	Mthr...	int-r-w.	ext-j-s.	l....	Gem...	c....	.....	.....	Mack Tractor.....AC
,125	16	Zenith..	vacm..	d-d...	.....	selec...	.....	mtr...	3	worm.	.....	7.5	r-rd....	tor-a...	.....	int-r-w.	ext-r-w.	l....	.....	c....	.....	.....	Manly.....30
,225	15	Zenith..	vacm..	d-d...	.....	selec...	.....	mtr...	3	worm.	.....	8.7	r-rd....	tor-a...	.....	int-r-w.	ext-r-w.	l....	.....	c....	.....	.....	Manly.....40
,020	14	Zenith..	vacm..	d-d...	.....	selec...	.....	mtr...	4	worm.	.....	8.75	r-rd....	tor-a...	.....	int-r-w.	int-r-w.	l....	.....	c....	.....	.....	Manly.....50
950	13	Zenith..	vacm..	d-d...	.....	selec...	.....	mtr...	4	worm.	.....	8.75	r-rd....	tor-a...	.....	int-r-w.	int-r-w.	l....	.....	c....	.....	.....	Manly.....60
.....	15	Master.	pres..	d-d...	Fuller..	selec...	Fuller..	mtr...	3	in-g...	Torb...	8.0	spgs...	spgs...	Dirt...	int-r-w.	ext-r-w.	l....	Lavn..	c....	.....	.....	Master.....M
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Master
.....	.....	.....	cone..	.....	.....	selec...	.....	mtr...	.....	.....	.....	.....	spgs...	spgs...	.....	int-r-w.	ext-r-w.	.....	.....	.....	.....	.....	Maxfer
,540	20	K-D...	grav..	cone..	own....	selec...	own....	mtr...	3	worm.	own....	7.25	spgs...	spgs...	.....	int-r-w.	int-r-w.	l....	own...	c....	block..	own...	Maxwell
900	25	Stmbg..	grav..	d-d...	B-Lipe.	selec...	B-Lipe.	mtr...	3	worm.	Timkn.	6.0	r-rd....	spgs...	Tut....	int-r-w.	int-r-w.	l....	Gem...	c....	.....	.....	Menominee.....EW
850	16	Stmbg..	grav..	d-d...	B-Lipe.	selec...	B-Lipe.	mtr...	3	worm.	Timkn.	8.75	r-rd....	spgs...	Tut....	int-r-w.	int-r-w.	l....	Gem...	c....	.....	.....	Menominee.....FW
800	15	Stmbg..	grav..	d-d...	B-Lipe.	selec...	B-Lipe.	mtr...	3	worm.	Timkn.	9.25	r-rd....	spgs...	Tut....	int-r-w.	int-r-w.	l....	Gem...	c....	.....	.....	Menominee.....H
750	14	Stmbg..	grav..	d-p...	B-Beck.	selec...	B-Lipe.	mtr...	3	worm.	Timkn.	9.25	r-rd....	spgs...	Tut....	int-r-w.	int-r-w.	l....	Gem...	c....	.....	.....	Menominee.....D
750	12	Stmbg..	grav..	d-p...	B-Beck.	selec...	Cotta..	amid..	3	worm.	Timkn.	10.3	r-rd....	spgs...	Tut....	int-r-w.	int-r-w.	l....	Gem...	c....	.....	.....	Menominee.....G
.....	.....	Zenith..	vacm..	d-d...	Fuller..	selec...	Fuller..	mtr...	3	worm.	Timkn.	.....	r-rd....	spgs...	Perf...	ext-r-w.	ext-r-w.	r....	Ross..	c....	.....	.....	Modern.....30
.....	.....	Mastr*.	grav..	d-d...	B-Lipe.	selec...	B-Lipe.	mtr...	3	worm.	Timkn.	6.0	spgs...	spgs...	own....	int-r-w.	int-r-w.	.....	Ross..	c....	.....	.....	Moreland

ABBREVIATIONS—Makers of Parts

)ther Options
-K—Atwater-Kent
ut-L—Auto-Lite
-Beck—Borg & Beck
-Lipe—Brown-Lipe
ing—Berling
rm—Bremer
ud—Buda
an—Candler
elfr—Celfor
hgo—Chicago
on—Continental
onn—Connecticut
trt—Detroit
Dynt—Dyneto
Eisma—Eisemann
E-M—English & Mersick
Eur—Eureka
Fed—Fedders
Franck—Francke
G&O—G & O Mfg. Co.
GBS—Golden, Belknap & Swartz
G-C—Garden City
Gem—Gemmer
Har—Harrison
Hart—Hartford
Hays—Hayes
Hig—Higgins
H-Shaw—Hele-Shaw
H-S—Herschell-Spillman
Idl—Ideal
Iron—Iron City
Jacx—Jackson-Church-Wilcox
Jhnson—Johnson
Kal—Kalamazoo
K-B—Kinsler-Bennett
Key-H—Keystone-Hindley
Lavn—Lavigne
LeR—LeRoi
Lgt—Light
Ligt—Liggett
Lyc—Lycoming
M'C—McCord
Merl—Merrill
Mil—Milwaukee
Mnrch—Monarch
Mthr—Mather
Natl—National
N. A.—North American
P & B—Parish & Bingham
Perf—Perfection
Prsh—Parish
R-T—Rome-Turney
Rayfld—Rayfield
Rowl—Wm. Harvey Rowland
Russl—Russel
Rut—Rutenber
Savg—Savage Arms
Salsby—Salisbury
Schblr—Schebler
Shel—Sheldon
Shkspr—Shakespeare
Smith—A. O. Smith
S-P—Spring-Perch
Spltf—Splitdorf
Stewrt—Stewart
Stmbg—Stromberg
Sundmn—Sunderman
S-W—Sparks Withington
Ther—Thermoid
Timkn—Timken
Torb—Torbenson
Tut—Tuthill
Univ—Universal Machine Co.
Wau—Waukesha
Wilcx—Wilcox
Wis—Wisconsin

Prices are exclusive of the 3 per cent Government war tax

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Technical Specifications of Gasoline

Name and Model	Tons Capacity	Chassis Price	Wheelbase, Inches	FRAME			TIRES			Wheels	ENGINE															GOVERNOR		
								Sizes in Ins.						COOLING			IGNITION			ELEC. SYSTEM								
				Make	Material	Type	Kind	Front	Rear		Make	No. Cyl. Bore and Stroke—N.A.C.C., Hp.	Cylinders Cast	Water Circ.	Radiator Make	Radiator Core and Case	Type	Make	Spark Advance	Type	Make	Extra Cost	Type	Make	Drive
Kissel	¾	1,185	135	.....	.....	.....	pnu..	32x4	32x4	....	own..	4-3½x5½-24.0	4	pump..	.....	.....	.....	Eismn	hand.	s&l*..	.....	....	cent..	Pierce...	motor.
Kissel	1½	1,585	152	.....	.....	.....	s....	34x3	34x5	....	own..	4-3½x5½-24.0	4	pump..	.....	.....	.....	Eismn	hand.	s&l*..	.....	....	cent..	Pierce...	motor.
Kissel	2	2,275	168	.....	.....	.....	s....	34x4	36x7	....	own..	4-4½x5½-28.9	4	pump..	.....	.....	.....	Eismn	hand.	s&l*..	.....	....	cent..	Pierce...	motor.
Kissel	3½	3,150	168	.....	.....	.....	s....	36x5	36x5d	....	own..	4-4½x5½-28.9	4	pump..	.....	.....	.....	Eismn	hand.	s&l*..	.....	....	cent..	Pierce...	motor.
Kleiber	AA	1	2,100	130	.....	rol-c.	s-flx.	s....	34x3½s	34x5s	wd..	Con..	4-3½x5½-22.5	4	cent...	Perf..	z-z-t-s...	dual..	Bosch.	hand.	.....	.....	....	cent..	Pierce...	motor.
Kleiber	A	1½	2,500	140	.....	rol-c.	s-flx.	s....	36x3½s	36x6s	wd..	Con..	4-4½x5½-27.2	4	cent...	Perf..	z-z-t-s...	dual..	Bosch.	hand.	.....	.....	....	cent..	Pierce...	motor.
Kleiber	BB	2	2,750	140	.....	rol-c.	s-flx.	s....	36x4s	36x7s	wd..	Con..	4-4½x5½-27.2	4	cent...	Perf..	z-z-t-s...	dual..	Bosch.	hand.	.....	.....	....	cent..	Pierce...	motor.
Kleiber	B	2½	3,200	150	.....	rol-c.	s-flx.	s....	36x4s	36x4d	wd..	Con..	4-4½x5½-32.4	2	cent...	Perf..	z-z-t-s...	dual..	Bosch.	hand.	.....	.....	....	cent..	Pierce...	motor.
Kleiber	C	3½	3,850	160	.....	rol-c.	s-flx.	s....	36x5s	36x5d*	wd..	Con..	4-4½x5½-32.4	2	cent...	Perf..	z-z-t-s...	dual..	Bosch.	hand.	.....	.....	....	cent..	Pierce...	motor.
Kleiber	D	5	4,900	170	.....	rol-c.	s-flx.	s....	36x6s	40x6d	wd..	Con..	4-5½x5½-44.2	2	cent...	Perf..	z-z-t-s...	dual..	Bosch.	hand.	.....	.....	....	cent..	Pierce...	motor.
Knox	35	.....	4,500	108½	.....	rol-c.	rigid.	s....	36x5s	38x6d	o-s.	own..	4-5x5½-40.0	2	cent...	Fed..	cel-sht...	sing..	Eismn	hand.	s&l2..	Bijur..	....	none.	none....	.....
Knox	36	3	5,000	108½	.....	rol-c.	rigid.	s....	36x4s	38x6d*	o-s.	own..	4-5x5½-40.0	2	cent...	Fed..	cel-sht...	sing..	Eismn	hand.	s&l2..	Bijur..	....	none.	none....	none..
Koehler	K	1½	1,150	129	own..	rol-c.	.....	s....	34x3s	34x4s	wd..	own..	4-3½x5 -19.6	4	ther....	own..	fin-cst...	sing..	Eismn	hand.	.....	.....	....	.....	.....	.....
Koehler Tractor	KT	3	1,550	106	own..	rol-c.	rigid.	s....	34x3s	34x5s	wd..	own..	4-3½x5 -19.6	4	ther....	own..	fin-cst...	sing..	Eismn	fix..	.....	.....	....	.....	Mnrch..	.....
Lambert	V2	1	1,700	144	.....	.....	.....	s....	36x3½	36x4	....	Rut..	4-4½x5½-29.0	1	.....	.....	.....	sing*.	Rem*.	hand.	l&i....	Vesta.	....	cent..	Pierce...	motor.
Lamson		1½	1,850	150*	.....	.....	.....	s....	36x3½	36x5	....	Wis..	4-4 x5 -25.6	4	.....	.....	.....	dual..	Bosch.	hand.	l&i....	Vesta.	....	cent..	Simplex.	.....
Lamson		2½	2,450	160*	.....	.....	.....	s....	36x4	36x7	....	Wis..	4-4 x6 -25.6	4	.....	.....	.....	dual..	Bosch.	hand.	l&i....	Vesta.	....	cent..	Simplex.	.....
Lamson		3½	3,150	170*	.....	.....	.....	s....	36x5	40x5d	....	Wis..	4-4½x5½-36.2	2	.....	.....	.....	dual..	Bosch.	hand.	l&i....	Vesta.	....	cent..	Simplex.	.....
Lamson		5	4,150	180*	.....	.....	.....	s....	36x6	40x6d	....	Wis..	4-5½x5½-41.6	2	.....	.....	.....	dual..	Bosch.	hand.	s&l....	.....	....	cent..	Simplex.	.....
Lane	F	1½	1,750	135	own..	rol-c.	rigid.	s....	34x3½s	34x4s	wd..	Con..	4-3½x5 -19.6	4	ther....	own..	fin-cst...	sing..	Conn..	hand.	sl&i2..	Roth..	none	cent.	Pierce...	motor.
Lane	B	2½	2,500	150	own..	rol-c.	rigid.	s....	34x4s	36x6s	wd..	Con..	6-3½x5½-29.4	4	cent...	own..	fin-cst...	sing..	Conn..	hand.	sl&i2.	Eoth..	none	cent..	Pierce...	motor.
Lane	C	3½	3,250	160	own..	rol-c.	rigid.	s....	36x5s	36x5d	wd..	Con..	6-3½x5½-33.7	3	cent...	own..	fin-cst...	sing..	Conn..	hand.	sl&i2.	Roth..	none	cent..	Pierce...	motor.
Lange	C	1½	1,950	136	.....	rol-c.	rigid.	s....	36x4s	38x6s	wd..	Con..	4-4½x5½-27.2	4	ther....	Fed..	sq-t-sht..	sing..	Bosch.	hand.	.....	.....	....	cent..	Pierce...	motor.
Lange	B	2½	2,650	136	.....	rol-c.	rigid.	s....	36x4s	38x6s	wd..	Con..	4-4½x5½-27.2	4	ther....	Fed..	sq-t-sht..	sing..	Bosch.	hand.	none..	none..	none	cent..	Pierce...	motor.
Lapeer	A	3	1,500	90	.....	rol-c.	s-flx.	s....	32x3½s	32x5s	wd..	Wau..	4-3½x5 -19.6	4	cent...	Can..	cel-cst...	sing..	Sptlf..	fix..	none..	none..	....	cent..	Wau....	motor.
Lapeer	C	5	1,900	90	.....	rol-c.	s-flx.	s....	32x3½s	32x3½d	wd..	Wau..	4-3½x5½-19.6	4	cent...	Can..	cel-cst...	sing..	Sptlf..	fix..	none..	none..	....	cent..	Wau....	motor.
Larrabee	M	1	1,800	130	Prsh..	p-stl.	flex..	s....	34x3½s	34x5s	wd..	Con..	4-3½x5 -22.5	4	ther....	Bush.	fin-cst...	sing..	Bosch.	hand.	none..	none..	....	cent..	Pierce...	motor.
Larrabee	N	1½	2,000	140	Prsh..	p-stl.	flex..	s....	36x3½s	36x5s	wd..	Con..	4-4½x5½-27.2	4	cent...	Bush.	fin-cst...	sing..	Bosch.	hand.	none..	none..	....	cent..	Pierce...	motor.
Larrabee	O	2½	2,700	154	Prsh..	p-stl.	flex..	s....	36x4s	36x7s	wd..	Con..	4-4½x5½-27.2	4	cent...	Bush.	fin-cst...	sing..	Bosch.	hand.	none..	none..	....	cent..	Pierce...	motor.
Larrabee	R	3½	3,400	154	Prsh..	p-stl.	flex..	s....	36x5s	36x5s	wd..	Con..	4-4½x5½-32.4	4	cent...	Bush.	fin-cst...	sing..	Bosch.	hand.	none..	none..	....	cent..	Pierce...	motor.
Lawson	35	½	.....	112	.....	.....	.....	pnu..	31x4	31x4	....	GBS.	4-3½x4½-22.5	4	.....	.....	.....	sing..	Dixie..	hand.	s&l....	.....	....	.....	.....	.....
Lippard-Stewart	MW	½	1,025	106	P&B..	p-stl.	flex..	pnu..	33x4s	33x4s	wd..	Wis..	4-3½x5 -16.9	4	ther....	Mayo	cel-sht...	sing..	Eismn	fix..	opt....	Remy.	....	.....	.....	.....
Lippard-Stewart	W	¾	1,750	125	P&B..	p-stl.	s-flx.	opt..	34x3s*	34x4s*	wd..	Con..	4-3½x5½-22.5	4	cent...	Fed..	cel-sht...	sing..	Eismn	fix..	opt....	Dynt..	....	cent..	Pierce...	motor.
Lippard-Stewart	HW	1	2,000	135	P&B..	p-stl.	s-flx.	s....	36x3s	36x5s	wd..	Con..	4-3½x5½-22.5	4	cent...	Fed..	cel-cst...	sing..	Eismn	fix..	s&l....	Dynt..	....	cent..	Pierce...	motor.
Lippard-Stewart	F	1½	2,450	158	P&B..	p-stl.	s-flx.	s....	36x3½s	36x3d	wd..	Con..	4-4½x5½-27.2	4	cent...	Fed..	cel-cst...	sing..	Eismn	fix..	s&l....	Dynt..	....	cent..	Pierce...	motor.
Lippard-Stewart	G	2	2,700	165	P&B..	p-stl.	.....	s....	36x4s	36x4d	wd..	Con..	4-4½x5½-27.2	4	cent...	Fed..	cel-cst...	sing..	Eismn	fix..	s&l....	Dynt..	....	cent..	Pierce...	motor.
Little Giant	15	¼	1,500	138	.....	.....	.....	p*..	34x4	34x3½	....	.....	4-3½x5 -19.6	4	.....	.....	.....	sing..	Eismn	hand.	.....	.....	....	.....	.....	.....
Little Giant	H	1	1,400	110	.....	.....	.....	s....	36x3	36x3½	....	Con..	4-3½x5½-19.6	4	.....	.....	.....	sing..	Eismn	hand.	.....	.....	....	.....	.....	.....
Little Giant	H	1½	1,500	110	.....	.....	.....	s....	36x3½	36x4	....	Bud..	4-3½x5½-19.6	4	.....	.....	.....	sing..	Eismn	hand.	.....	.....	....	.....	.....	.....
Little Giant	16	2	2,500	144	.....	.....	.....	s....	36x4	36x6	....	Con..	4-4½x5½-27.2	4	.....	.....	.....	sing..	Eismn	hand.	.....	.....	....	.....	.....	.....
Lumb	C	2½	1,900	148	.....	rol-c.	.....	opt.	.....	.....	wd..	Bud..	4-4½x5½-28.9	4	cent...	Chgo	fin-cst...	sing..	Bosch.	hand.	ltg....	.....	none	suct..	Mnrch..	.....
Maccar	L	1½	2,400	150	Prsh..	p-stl.	rigid.	s....	36x4s	36x5s	wd..	Con..	4-4½x5½-27.2	4	cent...	Bush.	fin-sht...	sing..	Bosch.	hand.	none..	none..	....	cent..	Pierce...	motor.
Maccar	H	2½	2,950	162	Prsh..	p-stl.	rigid.	s....	36x4s	36x4d	wd..	Con..	4-4½x5½-32.4	2	cent...	own..	fin-cst...	sing..	Bosch.	hand.	none..	none..	....	cent..	Pierce...	motor.
Maccar	M	3½	3,600	174	Prsh..	p-stl.	rigid.	s....	37x5s	37x5d	wd..	Con..	4-4½x5½-32.4	2	cent...	own..	fin-cst...	sing..	Bosch.	hand.	none..	none..	....	cent..	Pierce...	motor.
Maccar	U	5½	.....	186	Prsh..	p-stl.	rigid.	s....	37x5s	37x5d	wd..	.....	.....	.....	.....	own..	fin-cst...	sing..	Bosch.	hand.	.....	.....	....	.....	.....	.....
Mack	AB	1	2,400	144*	.....	p-stl.	s-flx.	s....	36x4s	36x3½d	wd..	own..	4-4 x5 -25.6	2	cent...	own..	cel-sht...	sing..	Sptlf..	hand.	opt....	opt....	....	cent..	own....	motor.
Mack	AB	1	2,400	144*	.....	p-stl.	s-flx.	s....	36x4s	36x3½d	wd..	own..	4-4 x5 -25.6	2	cent...	own..	cel-sht...	sing..	Sptlf..	hand.	opt....	opt....	....	cent..	own....	motor.
Mack	AB	1½	2,800	162*	.....	p-stl.	s-flx.	s....	36x4s	36x3½d	wd..	own..	4-4 x5 -25.6	2	cent...	own..	cel-sht...	sing..	Sptlf..	hand.	opt....	opt....	....	cent..	own....	motor.
Mack	AB	1½	2,800	162*	.....	p-stl.	s-flx.	s....	36x4s	36x3½d	wd..	own..	4-4 x5 -25.6	2	cent...	own..	cel-sht...	sing..	Sptlf..	hand.	opt....	opt....	....	cent..	own....	motor.
Mack	AB	2	3,000	162*	.....	p-stl.	s-flx.	s....	36x4s	36x4d	wd..	own..	4-4 x5 -25.6	2	cent...	own..	cel-sht...	sing..	Sptlf..	hand.	opt....	opt....	....	cent..	own....	motor.
Mack	AB	2	3,000	162*	.....	p-stl.	s-flx.	s....	36x4s	36x4d	wd..	own..	4-4 x5 -25.6	2	cent...	own..	cel-sht...	sing..	Sptlf..	hand.	opt....	opt....	....	cent..	own....	motor.
Mack	AC	3½	4,250	180*	.....	p-stl.	s-flx.	s....	36x5s	40x5d	wd..	own..	4-5 x6 -40.0	2	cent...	own..	rng-cst...	.....	Sptlf..	hand.	opt....	opt....	....	cent..	own....	motor.
Mack Tractor	AB	5	3,100	120	.....	p-stl.	s-flx.	s....	36x4s	36x4d	wd..	own..	4-4 x5 -25.6	2	cent...	own..	cel-sht...	sing..	Sptlf..	hand.	opt....	opt....	....	cent..	own....	motor.
Mack	AC	5½	4,750	180*	.....	p-stl.	s-flx.	s....	36x6s	40x6d	wd..	own..	4-5 x6 -40.0	2	cent...	own..	rng-cst...	.....	Sptlf..	hand.	opt....	opt....	....	cent..	own....	motor.
Mack Tractor	AC	7	4,250	119	.....	p-stl.	s-flx.	s....	36x5s	40x5d	wd..	own..	4-5 x6 -40.0	2	cent...	own..	rng-cst...	.....	Sptlf..	hand.	opt....	opt....	....	cent..	own....	motor.
Mack	AC	7½	5,000	180*	.....	p-stl.	s-flx.	s....	36x7s	40x7d	wd..	own..	4-5 x6 -40.0	2	cent...	own..	rng-cst...	.....	Sptlf..	hand.	opt....	opt....	....	cent..	own....	motor.
Mack Tractor	AC	11	4,750	119	.....	p-stl.	s-flx.	s....	36x6s	40x6d	wd..	own..	4-5 x6 -40.0	2	cent...	own..	rng-cst...	.....	Sptlf..	hand.	opt....	opt....	....	cent..	own....	motor.
Mack Tractor	AC	15	5,000	119	.....	p-stl.	s-flx.	s....	36x7s	40x7d	wd..	own..	4-5 x6 -40.0	2	cent...	own..	rng-cst...	.....	Sptlf..	hand.	opt....	opt....	....	cent..	own....	mo*ar.
Manly	30	1½	2,050	156	.....	p-stl.	flex..	s....	36x4s	36x5s	wd..	.....	4-3½x5½-22.5	4	cent...	.....	p-t-ci...	sing..	Eismn	hand.	s&l....	opt....	....	cent..	.....	motor.
Manly	40	2	2,250	156	.....	p-stl.	flex..	s....	36x4s	36x6s	wd..	.....	4-3½x5½-22.5	4	cent...	.....	p-t-ci...	sing..	Eismn	hand.	s&l....	opt....	....	cent..	.....	motor.
Manly	50	2½	2,600	168	.....	p-stl.	flex..	s....	36x4s	40x7s	wd..	.....	4-4 x5½-25.6	2	cent...	.....	p-t-ci...	sing..	Eismn	hand.	s&l....	opt....	....	cent..	.....	motor.
Manly	60	3	3,000	168	.....	p-stl.	flex..	s....	36x5s	40x8s	wd..	.....	4-4½x5½-28.9	2	cent...	.....	p-t-ci...	sing..	Eismn	hand.	s&l....	opt....	....	cent..	.....	motor.
Master	M	2	1,990	144	.....	.....	.....	s....	34x4	36x6	....	Bud..	4-4½x5½-28.9	4	.....	.....	.....	sing..	Eismn	fix..	.....	.....	....	suct..	Mnrch..	.....
Master		3½	2,990	160*	.....	.....	.....	.....	36x5	40x5	....	Bud..	4-4½x5½-27.2	....	.....	.....	.....	.....	Eismn	.....	.....	.....	....	.....	.....	.....
Maxfer		1	1,195	130	.....	pnu*	.....	.....	36x4	34x4	....	.....	4-3½x5 -19.6	....	ther....	.....	.....	.....	.....	.....	s&l....	Delco.	....	.....	.....	.....
Maxwell		1	865	124	Hyd..	p-stl.	s-flx.	s....	32x3s	32x4s	wd..	own..	4-3½x4½-21.0	4	ther....	own..	fin-p-s...	sing..	A-K..	hand.	ltg....	A-L..	none	suct..	none....	motor.
Menominee	EW	¾	1,425	124	.....	rol-c.	s-flx.	s....	34x3½s	34x4s	wd..	Con..	4-3½x5 -22.5	4	ther....	Long.	fin-p-s...	sing..	Eismn	hand.	.....	.....	....	cent..	own....	d-s....
Menominee	FW	1	1,790	130	.....	rol-c.	s-flx.	s....	36x3½s	36x4s	wd..	Con..	4-3½x5½-22.5	4	cent...	Long.	fin-p-s...	sing..	Eismn	hand.	.....	.....	....	cent..	own....	.....
Menominee	H	1½	2,050	144	.....	rol-c.	s-flx.	s....	36x3½s	36x5s	wd..	Con..	4-3½x5½-22.5	4	cent...	Long.	fin-p-s...	sing..	Eismn	hand.	.....	.....	....	l-b..	own....	d-s....
Menominee	D	2	2,475	144	.....	rol-c.	s-flx.	s....	36x4s	36x6*	wd..	Con..	4-4½x5½-27.2	2	cent...	R-T..	fin-cst...	sing..	Eismn	hand.	.....	.....	....	cent..	own....	d-s....
Menominee	G	3½	3,275	160	.....	rol-c.	s-flx.	s....	36x5s	36x5d	wd..	Con..	4-4½x5½-32.4	2	cent...	R-T..	fin-cst...	sing..	Eismn	hand.	.....	.....	....	cent..	own....	.....
Modern	30	.....	1,800	132	.....	p-stl.	s-flx.	s....	34x3½s	34x5s	wd..	Con..	4-3½x5 -22.5	4	cent...	Long.	fin-cst...	dual..	opt....	fix..	none..	none..	....	opt..	opt....	opt....
Moreland	1	1,900	126	....	p-stl.	s-flx.	s....	34x3½s	34x4s	wd..	Con..	4-3½x5 -22.5	4	ther....	own..	cel-sht...	sing..	Dixie..	hand.	opt....	West..	....	none.	none....	.....

ABBREVIATIONS—Types of Construction

*Other Options
amid—amidships
auto—automatic
c—center
c&l—center and left
c-s—cast steel
cent—centrifugal
cel-cst—cellular core cast case
cel-sht—cellular core sheet case
cylinders cast, 2 in pairs
cylinders cast, 4 in block
cylinders cast, 8 in threes
cylinders cast, 1 singly
d—dual
d-d—dry disk
d-p—dry plate
d-rd—double reduction
elec—electric
ext-dst—external drive-shaft
ext-f-s—external front wheels.
ext-jst—external jack-shaft
ext-r-w—external rear wheel
fab—fabric
fin-sht—finned tube core sheet case
fix—fixed
flex—flexible
fric—friction
gset—gearset
grav—gravity
hyd—hydraulic
ind-c—individual clutch
in-g—internal gear
in-g-4—internal gear drive on 4 wheels
int-dst—internal drive-shaft
int-f-w—internal front wheels
int-r-w—internal rear wheel
jst—unit with jackshaft
l—left
ltg—lighting
metl—metal
mtr—unit with motor
opt—optional
plst—piston pump
plan—planetary
pnu—pneumatic
pres—pressure
prog—progressive sliding gear
p-stl—pressed steel
r—right
r-a—unit with rear axle
ring-cst—ring core cast case
rol-c—rolled channel
rol-i—rolled I-beam
r-rd—radius rods
selec—selective sliding gear
s-flx—semi-flexible
s & l—starting and lighting
s, l & i—starting, lighting and ignition
s, l & i 2—starting, lighting and ignition two-unit
sing—single
s—solid
spgs—springs
sq-t-sht—square tube core sheet case
stk—stock
sub-f—sub-frame
ther—thermo-syphon
tor-a—torque arm
tor-t—torsion tube
vacm—vacuum
wd—wood
w-d—multiple disk in oil
worm—tup worm
w-p—wet plate
zz-t-sht—zig-zag tube core sheet case

Prices are exclusive of the 3 per cent. Government war tax

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Commercial Vehicles for 1918—Continued

ENGINE				TRANSMISSION											BRAKES		CONTROL			UNIVERSALS		
SPEED		FUEL SYS.		CLUTCH		GEARSET				FINAL DRIVE							STEERING GEAR					
Motor in R.p.m.	Truck in M.p.h.	Carburetor, Make	Fuel Feed	Type	Make	Type	Make	Placed	Speeds	Type	Axle Make	Total Gear Reduction	Propulsion Taken By	Torque Taken By	Springs, Make	Foot	Hand	Placed	Make	Levers	Type	Make	Name and Model
1,060	22	Stmbg..	vacm..	cone..	Warner	selec...	Warner	mtr...	3	bevel..	own....	4.58	spgs...	spgs...	.....	ext-r-w.	ext-r-w.	.....	Jacx..	.....	.....	.....	Kissel.....
1,100	17	Stmbg..	vacm..	d-p...	Warner	selec...	Warner	mtr...	3	worm.	Shel...	6.5	spgs...	spgs...	.....	int-r-w.	int-r-w.	.....	Jacx..	.....	.....	.....	Kissel.....
1,190	15	Stmbg..	vacm..	d-p...	B-Beck.	selec...	Muncie	mtr...	4	worm.	Timkn.	8.5	spgs...	spgs...	.....	int-r-w.	int-r-w.	.....	Lavn..	.....	.....	.....	Kissel.....
1,245	13	Stmbg..	vacm..	d-p...	Warner	selec...	Warner	mtr...	4	worm.	Shel...	10.3	spgs...	spgs...	.....	int-r-w.	int-r-w.	.....	Ross..	.....	.....	.....	Kissel.....
1,300	20	opt....	grav°..	d-d...	B-Lipe.	selec...	B-Lipe.	mtr...	3	worm.	Timkn.	6.7	spgs...	spgs...	Betts..	int-r-w.	int-r-w.	r....	Ross..	c....	.....	.....	Kleiber.....AA
1,250	18	opt....	grav°..	m-d...	H-Shaw	selec...	B-Lipe.	amid..	3	worm.	Shel...	7.75	spgs...	spgs...	Betts..	int-r-w.	int-r-w.	r....	Ross..	c....	.....	.....	Kleiber.....A
1,250	16	opt....	grav°..	m-d...	H-Shaw	selec...	B-Lipe.	amid..	3	worm.	Timkn.	8.5	spgs...	spgs...	Betts..	int-....	int-....	r....	Ross..	c....	.....	.....	Kleiber.....BB
1,200	14	opt....	grav°..	m-d...	H-Shaw	selec...	B-Lipe.	amid..	3	worm.	Shel...	8.75	spgs...	spgs...	Betts..	int-....	int-....	r....	Ross..	c....	.....	.....	Kleiber.....B
1,200	12	opt....	grav°..	m-d...	H-Shaw	selec...	B-Lipe.	amid..	4	worm.	Timkn.	10.33	spgs...	spgs...	Betts..	int-....	int-....	r....	Ross..	c....	.....	.....	Kleiber.....C
1,150	10	opt....	grav°..	m-d...	H-Shaw	selec...	B-Lipe.	amid..	4	worm.	Timkn.	11.66	spgs...	spgs...	Betts..	int-....	int-....	r....	Ross..	c....	.....	.....	Kleiber.....D
.....	.....	Zenith..	vacm..	d-p...	own....	selec...	own....	jsh...	3	chn...	Timkn.	9.6	r-rd....	.....	Iron...	int-r-w.	ext-j-s.	l....	Ross..	c....	Metl..	K-B...	Knox.....35
.....	.....	Zenith..	vacm..	d-p...	own....	selec...	own....	jsh...	3	chn...	Timkn.	12.0	r-rd....	.....	Iron...	int-r-w.	ext-j-s.	l....	Ross..	c....	Metl..	K-B...	Knox.....36
1,400	20	Stmbg..	grav..	d-d...	M&M..	selec...	M&M..	mtr...	3	in-g...	Torb...	7.0	spgs...	spgs...	.....	int-r-w.	ext-r-w.	l....	own...	c....	Metl..	K-B...	Koehler.....K
1,400	20	Stmbg..	grav..	d-d...	M&M..	selec...	M&M..	mtr...	3	in-g...	Torb...	7.0	spgs...	spgs...	.....	int-r-w.	ext-r-w.	l....	own...	c....	Metl..	K-B...	Koehler Tractor.....KT
1,500	.....	Schblr..	grav..	.....	own....	fric....	.....	chn...	.....	.....	.....	.....	r-rd....	.....	.....	int-....	ext-....	.....	Jacx..	.....	.....	.....	Lambert.....V2
1,200	16	Stmbg..	vacm..	d-p...	B-Beck.	id-e....	Cotta..	mtr...	3	worm.	Shel...	7.7	spgs...	spgs...	.....	int-r-w.	ext-r-w.	.....	Ross..	.....	.....	.....	Lamson.....
1,200	14	Stmbg..	vacm..	d-p...	B-Beck.	id-e....	Cotta..	mtr...	3	worm.	Shel...	.....	spgs...	spgs...	.....	int-r-w.	int-r-w.	.....	Ross..	.....	.....	.....	Lamson.....
1,200	12	Stmbg..	vacm..	d-p...	B-Beck.	id-e....	Cotta..	amid..	3	worm.	Shel...	11.7	spgs...	spgs...	.....	int-r-w.	int-r-w.	.....	Ross..	.....	.....	.....	Lamson.....
1,200	10	Stmbg..	vacm..	d-p...	B-Beck.	id-e....	Cotta..	amid..	3	worm.	Shel...	11.7	spgs...	spgs...	.....	int-r-w.	int-r-w.	.....	Ross..	.....	.....	.....	Lamson.....
1,200	18	Stmbg..	vacm..	d-d...	B-Beck.	selec...	Fuller..	mtr...	3	worm.	Wis....	7.2	spgs...	spgs...	Kal....	int-r-w.	ext-f-w.	l....	Lavn..	c....	Metl..	Acme..	Lane.....F
1,200	18	Stmbg..	vacm..	d-p...	B-Beck.	selec...	Covert.	amid..	3	worm.	Timkn.	7.75	spgs...	spgs...	Kal....	int-r-w.	int-r-w.	l....	Lavn..	c....	Metl..	Acme..	Lane.....B
1,200	12	Stmbg..	vacm..	d-p...	B-Beck.	selec...	Covert.	amid..	3	worm.	Shel...	8.75	spgs...	spgs...	Kal....	int-r-w.	int-r-w.	l....	Lavn..	c....	Metl..	Acme..	Lane.....C
1,250	15	Stmbg.	grav..	m-d...	M-Evn.	.....	Cotta..	amid.	3	chn...	.....	9.2	r-rd....	.....	Std....	int-r-w.	ext-d-s.	l....	Gem...	c....	.....	.....	Lange.....C
1,250	15	Stmbg.	grav..	m-d...	M-Evn.	.....	Cotta..	amid.	3	chn...	.....	9.2	r-rd....	.....	Std....	int-r-w.	ext-d-s.	l....	.....	c....	.....	.....	Lange.....B
1,000	12	Stewrt..	grav..	d-d...	Fuller..	selec...	Fuller..	mtr...	3	in-g...	Torb...	10.0	spgs...	spgs...	Ligt...	int-r-w.	ext-r-w.	l....	Ross..	c....	.....	.....	Lapeer.....A
1,000	8	Stewrt..	grav..	d-d...	Fuller..	selec...	Fuller..	mtr...	3	in-g...	Torb...	13.0	spgs...	spgs...	Ligt...	int-r-w.	ext-r-w.	l....	Ross..	c....	.....	.....	Lapeer.....C
1,400	18	Schblr..	grav..	d-d...	Fuller..	selec...	Fuller..	mtr...	3	worm.	Shel...	6.5	spgs...	spgs...	Merl...	int-r-w.	int-r-w.	l....	Lavn..	c....	Metl..	Univ...	Larrabee.....M
1,200	15	Schblr..	grav..	d-d...	Fuller..	selec...	Fuller..	mtr...	3	worm.	Shel...	7.75	spgs...	spgs...	Merl...	int-r-w.	int-r-w.	l....	Lavn..	c....	Metl..	Univ...	Larrabee.....N
1,200	14	Schblr..	grav..	d-d...	Fuller..	selec...	Fuller..	mtr...	3	worm.	Shel...	8.75	spgs...	spgs...	Merl...	int-r-w.	int-r-w.	l....	Lavn..	c....	Metl..	Univ...	Larrabee.....O
1,200	17	Schblr..	grav..	d-d...	Muncie	selec...	Muncie	mtr...	4	worm.	Shel...	11.5	spgs...	spgs...	Merl...	int-r-w.	int-r-w.	l....	Lavn..	c....	Metl..	Univ...	Larrabee.....R
.....	.....	Schblr..	grav..	.....	G-Lees.	selec...	G-Lees.	mtr...	3	bevel..	Proe...	4.3	spgs...	spgs...	.....	int-....	ext-....	.....	.....	.....	.....	.....	Lawson.....3S
1,500	25	Zenith..	grav..	cone..	own....	selec...	Covert.	amid..	3	worm.	Timkn.	5.8	spgs...	spgs...	Mthr...	int-r-w.	int-....	l....	Jacx..	c....	Metl..	Spicer..	Lippard-Stewart...MW
1,200	20	Zenith..	grav..	cone..	Hart....	selec...	B-Lipe.	amid.	3	worm.	Timkn.	6.0	spgs...	spgs...	Mthr...	int-r-w.	int-r-w.	l....	Ross..	c....	Metl..	Spicer..	Lippard-Stewart.....W
1,180	18	Zenith..	grav..	cone..	Hart....	selec...	B-Lipe.	amid.	3	worm.	Timkn.	7.0	spgs...	spgs...	Mthr...	int-r-w.	int-....	l....	Ross..	c....	Metl..	Spicer..	Lippard-Stewart....HW
1,300	18	Zenith..	grav..	cone..	Hart....	selec...	B-Lipe.	amid.	3	worm.	Timkn.	7.75	spgs...	spgs...	Mthr...	int-r-w.	int-....	l....	Ross..	c....	Metl..	Spicer..	Lippard-Stewart.....F
1,295	15	Zenith..	grav..	cone..	Hart....	selec...	B-Lipe.	amid.	3	worm.	Timkn.	9.2	spgs...	spgs...	Mthr...	int-r-w.	int-....	l....	Ross..	c....	Metl..	Spicer..	Lippard-Stewart.....G
.....	.....	Schblr..	grav..	d-d...	B-Lipe.	selec...	B-Lipe.	mtr...	3	worm.	Timkn.	6.0	spgs...	spgs...	.....	int-r-w.	int-r-w.	.....	Jacx..	.....	.....	.....	Little Giant.....15
.....	.....	Schblr..	grav..	dsk...	B-Lipe.	.....	B-Lipe.	jst....	3	chn...	Timkn.	6.8	r-rd....	.....	.....	ext-....	ext-....	.....	Jacx..	.....	.....	.....	Little Giant.....H
.....	.....	Schblr..	grav..	dsk...	Hoosr..	selec...	Covert.	jst....	3	chn...	Russl..	6.8	r-rd....	.....	.....	ext-r-w.	ext-j-s.	.....	Jacx..	.....	.....	.....	Little Giant.....H
.....	.....	Schblr..	grav..	d-d...	B-Lipe.	selec...	.....	mtr...	3	worm.	.....	7.7	spgs...	spgs...	.....	int-r-w.	int-r-w.	.....	Ross..	.....	.....	.....	Little Giant.....16
1,100	15	Stmbg..	vacm..	d-d...	.....	selec...	.....	mtr...	3	in-g...	.....	.....	.....	spgs...	Shel...	ext-r-w.	int-....	l....	Lavn..	c....	.....	.....	Lamb.....C
1,000	16	Stmbg..	grav..	d-d...	B-Lipe.	selec...	B-Lipe.	mtr...	3	worm.	Timkn.	7.0	r-rd....	spgs...	Merl...	int-r-w.	int-r-w.	l....	Ross..	c....	Metl..	Spicer..	Maccar.....L
1,000	15	Stmbg..	grav..	d-d...	B-Lipe.	selec...	B-Lipe.	mtr...	3	worm.	Timkn.	7.75	r-rd....	spgs...	Merl...	int-....	int-....	l....	Ross..	c....	Metl..	Spicer..	Maccar.....H
1,000	14	Stmbg..	grav..	d-d...	B-Lipe.	selec...	B-Lipe.	mtr...	3	worm.	Timkn.	10.3	r-rd....	spgs...	Merl...	int-r-w.	int-....	l....	Ross..	c....	Metl..	Spicer..	Maccar.....M
.....	.....	.....	grav..	d-d...	B-Lipe.	selec...	B-Lipe.	amid..	4	worm.	Timkn.	11.5	r-rd....	spgs...	Merl...	int-r-w.	int-r-w.	l....	Ross..	c....	Metl..	Spicer..	Maccar.....U
1,275	.....	Stmbg°	grav..	d-d...	B-Lipe.	selec...	B-Lipe.	mtr...	4	worm.	Timkn.	7.75	spgs...	spgs...	Mthr...	int-r-w.	int-r-w.	l....	Gem...	c....	.....	.....	Mack.....AB
1,275	.....	opt....	grav..	d-d...	B-Lipe.	selec...	B-Lipe.	mtr...	4	chn...	own....	6.29	r-rd....	.....	Mthr...	int-r-w.	int-d-s.	l....	Gem...	c....	.....	.....	Mack.....AB
1,275	.....	Stmbg°	grav..	d-d...	B-Lipe.	selec...	B-Lipe.	mtr...	4	worm.	Timkn.	8.5	spgs...	spgs...	Mthr...	int-r-w.	int-r-w.	l....	Gem...	c....	.....	.....	Mack.....AB
1,275	.....	Stmbg°	grav..	d-d...	B-Lipe.	selec...	B-Lipe.	mtr...	4	chn...	Timkn.	6.99	r-rd....	.....	Mthr...	int-r-w.	ext-d-s.	l....	Gem...	c....	.....	.....	Mack.....AB
1,275	.....	Stmbg°	grav..	d-d...	B-Lipe.	selec...	B-Lipe.	mtr...	4	worm.	Timkn.	8.5	spgs...	spgs...	Mthr...	int-r-w.	int-r-w.	l....	Gem...	c....	.....	.....	Mack.....AB
1,275	.....	Stmbg°	grav..	d-d...	B-Lipe.	selec...	B-Lipe.	mtr...	4	chn...	own....	6.99	r-rd....	.....	Mthr...	int-r-w.	ext-d-s.	l....	Gem...	c....	.....	.....	Mack.....AB
1,000	.....	Stmbg°	grav..	d-p...	own....	selec...	own....	amid..	3	chn...	own....	7.45	r-rd....	.....	Mthr...	int-r-w.	ext-j-s.	l....	Gem...	c....	.....	.....	Mack.....AC
1,275	.....	Stmbg°	grav..	d-d...	B-Lipe.	selec...	B-Lipe.	mtr...	4	chn...	own....	10.6	r-rd....	.....	Mthr...	int-r-w.	ext-d-s.	l....	Gem...	c....	.....	.....	Mack Tractor.....AB
1,000	.....	Stmbg°	grav..	d-p...	own....	selec...	own....	amid..	3	chn...	own....	8.4	r-rd....	.....	Mthr...	int-r-w.	ext-j-s.	l....	Gem...	c....	.....	.....	Mack.....AC
1,000	.....	Stmbg°	grav..	d-p...	own....	selec...	own....	amid..	3	chn...	own....	10.77	r-rd....	.....	Mthr...	int-r-w.	ext-j-s.	l....	Gem...	c....	.....	.....	Mack Tractor.....AC
1,000	.....	Stmbg°	grav..	d-p...	own....	selec...	own....	amid..	3	chn...	own....	11.58	r-rd....	.....	Mthr...	int-r-w.	ext-j-s.	l....	Gem...	c....	.....	.....	Mack.....AC
1,000	.....	Stmbg°	grav..	d-p...	own....	selec...	own....	amid..	3	chn...	own....	11.5	r-rd....	.....	Mthr...	int-r-w.	ext-j-s.	l....	Gem...	c....	.....	.....	Mack Tractor.....AC
1,000	.....	Stmbg°	grav..	d-p...	own....	selec...	own....	amid..	3	chn...	own....	14.1	r-rd....	.....	Mthr...	int-r-w.	ext-j-s.	l....	Gem...	c....	.....	.....	Mack Tractor.....AC
1,125	16	Zenith..	vacm..	d-d...	.....	selec...	.....	mtr...	3	worm.	.....	7.5	r-rd....	tor-s...	.....	int-r-w.	ext-r-w.	l....	.....	c....	.....	.....	Manly.....30
1,225	15	Zenith..	vacm..	d-d...	.....	selec...	.....	mtr...	3	worm.	.....	8.7	r-rd....	tor-s...	.....	int-r-w.	ext-r-w.	l....	.....	c....	.....	.....	Manly.....40
1,020	14	Zenith..	vacm..	d-d...	.....	selec...	.....	mtr...	4	worm.	.....	8.75	r-rd....	tor-s...	.....	int-r-w.	int-r-w.	l....	.....	c....	.....	.....	Manly.....50
960	13	Zenith..	vacm..	d-d...	.....	selec...	.....	mtr...	4	worm.	.....	8.75	r-rd....	tor-s...	.....	int-r-w.	int-r-w.	l....	.....	c....	.....	.....	Manly.....60
.....	15	Master.	pres...	d-d...	Fuller..	selec...	Fuller..	mtr...	3	in-g...	Torb...	8.0	spgs...	spgs...	Dtrt...	int-r-w.	ext-r-w.	l....	Lavn..	c....	.....	.....	Master.....M
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Master.....
.....	.....	.....	cone..	.....	.....	selec...	.....	mtr...	.....	.....	.....	.....	spgs...	spgs...	.....	int-r-w.	ext-r-w.	.....	.....	.....	.....	.....	Marfer.....
1,540	20	K-D...	grav..	cone..	own....	selec...	own....	mtr...	3	worm.	own....	7.25	spgs...	spgs...	.....	int-r-w.	int-r-w.	l....	own...	c....	block..	own....	Maxwell.....
900	25	Stmbg..	grav..	d-d...	B-Lipe.	selec...	B-Lipe.	mtr...	3	worm.	Timkn.	6.0	r-rd....	spgs...	Tut....	int-r-w.	int-r-w.	l....	Gem...	c....	.....	.....	Menominee.....EW
850	16	Stmbg..	grav..	d-d...	B-Lipe.	selec...	B-Lipe.	mtr...	3	worm.	Timkn.	8.75	r-rd....	spgs...	Tut....	int-r-w.	int-r-w.	l....	Gem...	c....	.....	.....	Menominee.....FW
800	15	Stmbg..	grav..	d-d...	B-Lipe.	selec...	B-Lipe.	mtr...	3	worm.	Timkn.	9.25	r-rd....	spgs...	Tut....	int-r-w.	int-r-w.	l....	Gem...	c....	.....	.....	Menominee.....H
750	14	Stmbg..	grav..	d-p...	B-Beck.	selec...	B-Lipe.	mtr...	3	worm.	Timkn.	9.25	r-rd....	spgs...	Tut....	int-r-w.	int-r-w.	l....	Gem...	c....	.....	.....	Menominee.....D
750	12	Stmbg..	grav..	d-p...	B-Beck.	selec...	Cotta..	amid..	3	worm.	Timkn.	10.3	r-rd....	spgs...	Tut....	int-r-w.	int-r-w.	l....	Gem...	c....	.....	.....	Menominee.....G
.....	.....	Zenith..	vacm..	d-d...	Fuller..	selec...	Fuller..	mtr...	3	worm.	Timkn.	.....	r-rd....	spgs...	Perf...	ext-r-w.	ext-r-w.	r....	Ross..	c....	.....	.....	Modern.....30
.....	.....	Mastr°.	grav..	d-d...	B-Lipe.	selec...	B-Lipe.	mtr...	3	worm.	Timkn.	6.0	spgs...	spgs...	own....	int-r-w.	int-r-w.	.....	Ross..	c....	.....	.....	Moreland.....

ABBREVIATIONS—Makers of Parts

°Other Options
A-K—Atwater-Kent
Aut-L—Auto-Lite
B-Beck—Borg & Beck
B-Lipe—Brown-Lipe
Bling—Berling
Brm—Bremer
Bud—Buda
Can—Candler
Celfr—Celfor
Chgo—Chicago
Con—Continental
Conn—Connecticut
Dtrt—Detroit
Dynt—Dyneto
Eismn—Eisemann
E-M—English & Mersick
Eur—Eureka
Fed—Fedders
Franck—Francke
G&O—G & O Mfg. Co.
GBS—Golden, Belknap & Swarts
G-C—Garden City
Gem—Gemmer
Har—Harrison
Hart—Hartford
Hays—Hayes
Hig—Higgins
H-Shaw—Hele-Shaw
H-S—Herschell-Spillman
Idl—Ideal
Iron—Iron City
Jacx—Jackson-Church-Wilcox
Jhnson—Johnson
Kal—Kalamazoo
K-B—Kinsler-Bennett
Key-H—Keystone-Hindley
Lavn—Lavigne
LeR—LeRoi
Lgt—Light
Ligt—Liggett
Lyc—Lycoming
M'C—McCord
Merl—Merrill
Mil—Milwaukee
Mnrch—Monarch
Mthr—Mather
Natl—National
N. A.—North American
P & B—Parish & Bingham
Perf—Perfection
Prsh—Parish
R-T—Rome-Turney
Rayfld—Rayfield
Rowl—Wm. Harvey Rowland
Russl—Russel
Rut—Rutenber
Savg—Savage Arms
Salsby—Salisbury
Schblr—Schebler
Shel—Sheldon
Shkspr—Shakespeare
Smth—A. O. Smith
S-P—Spring-Perch
Spltf—Spltdorf
Stewrt—Stewart
Stmbg—Stromberg
Sundmn—Sunderman
S-W—Sparks Withington
Ther—Thermoid
Timkn—Timken
Torb—Torbenson
Tut—Tuthill
Univ—Universal Machine Co.
Wau—Waukesha
Wilcx—Wilcox
Wis—Wisconsin

Prices are exclusive of the 3 per cent Government war tax

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Technical Specifications of Gasoline

Name and Model	Tons Capacity	Chassis Price	Wheelbase, Inches	FRAME			TIRES			Wheels	ENGINE																GOVERNOR		
				Make	Material	Type	Kind	Sizes in Ins. Front	Sizes in Ins. Rear		Make	No. Cyl. Bore and Stroke—N.A.C.C., Hp.	Cylinders Cast	COOLING Water Circ.	COOLING Radiator Make	COOLING Radiator Core and Case	IGNITION Type	IGNITION Make	IGNITION Spark Advance	ELEC. SYSTEM Type	ELEC. SYSTEM Make	ELEC. SYSTEM Extra Cost	GOVERNOR Type	GOVERNOR Make	GOVERNOR Drive
Moreland	1½	.....	106	.....	p-stl.	s-flx.	s....	36x3½	36x5s	c-s.	Con.	4-4½x5½-27.2	4	cent.	own.	cel-sht.	sing.	Dixie.	hand.	opt.	West.	....	cent.	Pierce.	motor
Moreland	2½	3,000	144	.....	p-stl.	s-flx.	s....	36x4s	36x7s	c-s.	Con.	4-4½x5½-32.4	2	cent.	own.	cel-sht.	dual.	Dixie.	hand.	opt.	West.	....	.....	Pierce.	motor
Moreland	4	3,800	162	.....	p-stl.	s-flx.	s....	36x5s	40x5d	c-s.	Wau.	4-4½x6½-36.1	2	cent.	own.	cel-sht.	dual.	Dixie.	hand.	opt.	West.	....	cent.	Wau.	.....
Moreland	5	4,500	....	.....	p-stl.	.....	s....	36x6s	40x6d	c-s.	Wau.	4-4½x6½-36.1	2	cent.	own.	cel-sht.	dual.	Dixie.	hand.	opt.	West.	....	cent.	Wau.	.....
Muskegon	20	2,200	144	P&B.	p-stl.	s-flx.	s....	36x4	36x6	wd.	Con.	4-4¼x5¼-27.2	4	cent.	own.	cel-cst.	sing.	Eismn	fix.	ltg*	.....	opt.	cent.	Pierce.	motor
Nash	2017	1,495	130	Smth.	p-stl.	flex.	s*	34x3	34x4	wd.	own.	4-3½x5½-22.5	4	cent.	M'C.	fin-cst.	sing.	Delco.	hand.	sl&i2.	Bijur.	stk.	cent.	Simplex	motor
Nash	4017	3,250	124	Smth.	p-stl.	flex.	s....	36x5	36x5	c-s.	Bud.	4-4½x5½-28.9	4	cent.	M'C.	fin-cst.	sing.	Eismn	hand.	s&l2.	Bijur.	125	cent.	Duplex.	duplx
Nelson & LeMoon	E	1,900	opt.	.....	rol-c.	s-flx.	s....	36x3½	36x5	wd.	Con.	4-3½x5½-22.5	4	cent.	Chg.	zz-t-ps.	sing.	Bosch.	hand.	sl&i.	West.	125	suct.	Mnrch.	motor
Nelson & LeMoon	E	2,250	opt.	.....	rol-c.	s-flx.	s....	36x4	36x7	wd.	Con.	4-4½x5½-27.2	4	cent.	Chg.	zz-t-ps.	dual.	Bosch.	hand.	sl&i.	West.	125	suct.	Mnrch.	motor
Nelson & LeMoon	E	2,950	opt.	.....	rol-c.	s-flx.	s....	36x5	38x5d	wd.	Con.	4-4½x5½-32.4	2	cent.	Chg.	zz-t-ps.	dual.	Bosch.	hand.	sl&i.	West.	125	suct.	Mnrch.	motor
Nelson & LeMoon	.....	3,750	opt.	.....	rol-c.	s-flx.	s....	36x6	40x6d	wd.	Bud.	4-4½x6 -32.4	4	cent.	Chg.	zz-t-ps.	dual.	Bosch.	hand.	sl&i.	West.	125	suct.	Mnrch.	motor
Netco	D	2,500	144	Prsh.	p-stl.	rigid.	s....	36x4	36x6	wd.	Con.	4-4¼x5½-27.2	4	cent.	R-T.	fin-cst.	sing.	Eismn	fix.	none.	none.	....	none	none	.....
New York	M	2,200	144*	.....	.....	.....	s....	36x3½	36x5	....	.....	4-4¼x5½-27.2	4	.....	.....	.....	sing.	Bosch.	fix.	.....	.....	....	cent.	Pierce.	motor
New York	N	2,600	144	.....	.....	.....	s....	36x4	36x4d	....	.....	4-4¼x5½-27.2	4	.....	.....	.....	sing.	Bosch.	fix.	.....	.....	....	cent.	Pierce.	motor
Niles	B	1,500	124	.....	.....	.....	pnu.	35x5	35x5	....	Con.	4-3½x5 -19.6	4	ther.	.....	.....	sing.	Eismn	hand.	.....	.....	....	cent.	Pierce.	motor
Niles	E	2,400	140*	.....	.....	.....	s....	36x4	36x7	....	Con.	4-4¼x5½-27.2	4	.....	.....	.....	sing.	Eismn	hand.	.....	.....	....	cent.	Pierce.	motor
Noble	NW	2,300	148	Dtrt.	p-stl.	.....	.....	36x4	36x6	....	Con.	4-4¼x5½-27.2	....	.....	.....	.....	.....	Eismn	.....	.....	.....	35	....	Pierce.	.....
Old Hickory	M	875	112	.....	rol-c.	flex.	pnu.	33x4	33x4	wd.	Lyc.	4-3½x5 -16.9	4	ther.	Can.	sq-t-ps.	sing.	Conn.	hand.	sl&i.	Dynt.	stk.	none	none	.....
Old Reliable	.....	1,950	150*	.....	p-stl.	.....	s....	34x3½	36x6	....	Wis.	4-3½x5 -22.5	4	.....	.....	.....	sing.	Bosch.	hand.	ltg.	.....	.....	.....	.....	.....
Old Reliable	.....	2,450	150	.....	.....	.....	s....	34x4	36x4d	....	Wis.	4-4 x6 -25.6	4	.....	.....	.....	sing.	Bosch.	hand.	ltg.	.....	.....	cent.	Duplex.	duplx
Old Reliable	.....	2,750	....	.....	.....	.....	s....	34x4	36x4d	....	Wis.	4-4½x5 -29.0	2	.....	.....	.....	sing.	Bosch.	hand.	.....	.....	.....	.....	.....	.....
Old Reliable	.....	3,250	150	.....	.....	.....	s....	34x5	36x5d	....	Wis.	4-4½x6 -29.0	4	.....	.....	.....	sing.	Bosch.	hand.	ltg.	.....	.....	cent.	Duplex.	duplx
Old Reliable	.....	3,750	....	.....	.....	.....	s....	36x5	40x5d	....	Wis.	4-4½x5½-36.2	2	.....	.....	.....	sing.	Bosch.	hand.	ltg.	.....	.....	cent.	Duplex.	duplx
Old Reliable	.....	3,750	....	.....	.....	.....	s....	36x6	36x6d	....	Wis.	4-4½x5½-36.2	2	.....	.....	.....	sing.	Bosch.	hand.	ltg.	.....	.....	.....	.....	.....
Old Reliable	.....	4,500	150*	.....	.....	.....	s....	36x6	36x6d	....	Wis.	4-4½x5½-36.2	2	.....	.....	.....	sing.	Bosch.	hand.	ltg.	.....	.....	cent.	Duplex.	duplx
Old Reliable	.....	5,000	150	.....	.....	.....	s....	36x6	40x7d	....	.....	4-5 9/16x5½-41.6	2	.....	.....	.....	sing.	Bosch.	hand.	ltg.	.....	.....	cent.	Duplex.	duplx
Oneida	A	1	2,000	130	own.	rol-c.	s-flx.	s....	36x3½	36x5	wd.	Con.	4-3½x5½-22.5	4	cent.	Long.	fin-cst.	sing.	Bosch.	hand.	ltg.	Bosch.	stk.	cent.	Duplex.	motor
Oneida	B	1½	2,650	130	own.	rol-c.	s-flx.	s....	36x3½	36x5	wd.	Con.	4-4½x5½-27.23	4	cent.	Long.	fin-cst.	sing.	Bosch.	hand.	ltg.	Bosch.	stk.	cent.	Duplex.	motor
Oneida	C	2	3,000	144	own.	rol-c.	s-flx.	s....	36x4	36x4d*	wd.	Con.	4-4½x5½-27.23	4	cent.	Long.	fin-cst.	sing.	Bosch.	hand.	ltg.	Bosch.	stk.	cent.	Duplex.	motor
Oneida	D	3½	3,600	160	own.	rol-c.	s-flx.	s....	36x5	36x5d	wd.	Con.	4-4½x5½-32.40	2	cent.	Long.	fin-cst.	sing.	Bosch.	hand.	ltg.	Bosch.	stk.	cent.	Duplex.	motor
Overland	.....	635	104	.....	p-stl.	rigid.	pnu.	31x4	31x4	wd.	own.	4-3½x5 -18.23	4	ther.	own.	cel-ps.	sing.	opt.	hand.	sl&i 2.	A-L.	none	none	none	.....
Overland	.....	800	106	.....	p-stl.	rigid.	pnu.	33x4½	33x4½	wd.	own.	4-4½x4½-27.23	4	ther.	own.	cel-ps.	sing.	opt.	hand.	sl&i 2.	A-L.	none	none	none	.....
Packard	D	1	2,450	126*	.....	.....	.....	s....	34x3½	34x6	....	own.	4-4 x5½-25.6	4	.....	.....	.....	dual.	Dixie.	hand.	s&l.	Bijur.	....	cent.	own.	motor
Packard	D	1½	2,800	126*	.....	.....	.....	s....	34x3½	34x3½d	....	own.	4-4 x5½-25.6	4	.....	.....	.....	dual.	Dixie.	hand.	s&l.	Bijur.	....	cent.	own.	motor
Packard	D	2	3,200	144*	.....	.....	.....	s....	34x4	34x4d	....	own.	4-4 x5½-25.6	4	.....	.....	.....	dual.	Dixie.	hand.	s&l.	Bijur.	....	cent.	own.	motor
Packard	D	3	3,900	156*	.....	.....	.....	s....	36x5	36x5d	....	own.	4-4½x5½-32.4	4	.....	.....	.....	dual.	Dixie.	hand.	s&l.	Bijur.	....	cent.	own.	motor
Packard	D	4	4,375	156*	.....	.....	.....	s....	36x5	40x5d	....	own.	4-4½x5½-32.4	4	.....	.....	.....	dual.	Dixie.	hand.	s&l.	Bijur.	....	cent.	own.	motor
Packard	.....	5	4,900	....	.....	.....	.....	s....	.....	.....	....	Str.	4-5 x5½-40.0	4	.....	.....	.....	dual.	Dixie.	hand.	s&l.	Bijur.	....	cent.	own.	motor
Packard	.....	6	5,100	....	.....	.....	.....	.....	.....	.....	....	.....	4-5 x5½-40.0	4	.....	.....	.....	dual.	Dixie.	hand.	s&l.	Bijur.	....	cent.	own.	motor
Packet	.....	½	300	100	.....	rol-I.	s-flx.	pnu.	28x3	28x3	wd.	own.	4-2½x4 -12.1	4	ther.	own.	zz-t-sh.	sing.	A-K.	auto.	.....	.....	.....	.....	.....	.....
Palmer	.....	1	1,585	132	P&B.	p-stl.	.....	opt.	34x3½	34x4	wd.	Con.	4-3½x5 -22.50	4	cent.	Fed.	cel-cst.	dual.	Bosch.	fix.	.....	.....	.....	.....	Pierce.	motor
Palmer	.....	2	2,275	144	P&B.	p-stl.	.....	s....	36x3½	36x4d*	wd.	Con.	4-4½x5½-27.23	4	cent.	Fed.	cel-cst.	dual.	Bosch.	fix.	.....	.....	.....	.....	Pierce.	motor
Peerless	TC	2	3,000	145	own.	rol-c.	s-flx.	s....	36x4	36x4d	wd.	own.	4-4½x6½-32.4	2	gear.	own.	fin-cst.	dual.	Remy.	hand.	ltg 2.	G&D.	....	cent.	own.	motor
Peerless	TC	3	3,700	151	own.	rol-c.	rigid.	s....	36x4	40x4d	wd.	own.	4-4½x6½-32.4	2	gear.	own.	fin-cst.	dual.	Remy.	hand.	ltg 2.	G&D.	....	cent.	own.	motor
Peerless	TC	4	4,000	151	own.	rol-c.	rigid.	s....	36x5	40x5d	wd.	own.	4-4½x6½-32.4	2	gear.	own.	fin-cst.	dual.	Remy.	hand.	ltg 2.	G&D.	....	cent.	own.	motor
Peerless	TC	5	4,500	151	own.	rol-c	rigid.	s....	38x6	42x6d	wd.	own.	4-4½x6½-32.4	2	gear.	own.	fin-cst.	dual.	Remy.	hand.	ltg 2.	G&D.	....	cent.	own.	motor
Peerless	TC	6	5,000	151	own.	rol-c	s-flx.	.s....	38x7	42x7d	wd.	own.	4-4½x6½-32.4	2	gear.	own.	fin-cst.	dual.	Remy.	hand.	ltg 2.	G&D.	....	cent.	own.	motor
Pierce-Arrow	.....	2	3,300	150	own.	p-stl.	flex.	s....	36x4	36x4d	wd.	own.	4-4 x5½-25.6	2	cent.	own.	fin-cst.	dual.	Eismn	hand.	s&l 2.	opt.	....	cent.	own.	motor
Pierce-Arrow	.....	5	5,000	168	own.	p-stl.	flex.	s....	36x5	40x6d	wd.	own.	4-4¾x6 -38.0	2	cent.	own.	fin-cst.	dual.	Eismn	hand.	s&l.	opt.	....	cent.	own.	motor
Pull-More	.....	3	3,400	153	.....	.....	.....	s....	36x6	36x6	....	Bud.	4-4½x6 -32.4	4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Rainier	R	½	895	115	P&B.	p-stl	rigid.	pnu.	32x3½	32x3½	wd.	Lght.	4-3½x4½-16.9	4	ther.	Bush.	fin-ps.	sing.	Spltf.	hand.	2.	Bijur.*	.....	.....	.....	.....
Rennoc-Leslie	.....	2½	3,250	144	own.	p-stl	s-flx.	s....	36x5	36x7	wd.	Bud.	4-4½x5½-27.2	4	cent.	.....	fin-cst.	dual.	Spltf.	hand.	ltg.	West.	stk.	cent.	Pierce.	motor
Rennoc-Leslie Tractor	.....	3	3,250	116	own.	p-stl	s-flx.	s....	36x5	36x7	wd.	Bud.	4-4½x5½-27.2	4	cent.	.....	fin-cst.	dual.	Spltf.	hand.	ltg.	West.	stk.	cent.	Pierce.	motor
Reo	F	¾	1,050	128	own.	p-stl	rigid.	pnu.	34x4½	34x4½	wd.	own.	4-4½x4½-27.2	2	cent.	own.	fin-sht.	sing.	Remy.	hand.	sl&i 2.	Remy.	stk.	none	none	.....
Reo	J	2	1,800	146	own.	p-stl	rigid.	s....	36x4	36x3½d	wd.	own.	4-4½x4½-27.2	2	cent.	own.	fin-cst.	dual.	Natl	hand.	sl&i 2.	Remy.	180	hyd.	own.	motor
Republic	.....	¾	895c	110	Dtrt*	p-stl	s-flx.	opt.	32x4*	32x4*	wd.	own.	4-3½x5 -16.9	4	ther.	own.	sq-t-c.	sing.	Remy.	fix.	stg.	Remy.	stk.	suct.	Ruggles.	motor
Republic	.....	¾	895	128	Savg*	p-stl	s-flx.	opt.	32x4½*	33x5*	wd.	own.	4-3½x5 -16.9	4	ther.	own.	sq-t-c.	sing.	Eismn	fix.	.....	.....	.....	suct.	Ruggles.	motor
Republic	10	1	1,195c	124	Dtrt*	p-stl	s-flx.	s....	34x3	34x4	wd.	Con.	4-3½x5 -19.6	4	ther.	own.	cel-cst.	sing.	Bosch.	fix.	.....	.....	.....	suct	Ruggles.	motor
Republic	11	1½	1,450	144	Dtrt*	p-stl	s-flx.	s....	34x3½	34x5	wd.	Con.	4-3½x5 -22.5	4	ther.	own.	cel-cst.	sing.	Bosch.	fix.	.....	.....	.....	suct.	Ruggles.	motor
Republic	A	2	1,885	144	Savg*	p-stl	s-flx.	s....	34x4	34x6	wd.	Bud.	4-4½x5½-27.2	4	cent.	own.	cel-cst.	sing.	Bosch.	fix.	.....	.....	.....	suct.	Ruggles.	motor
Republic	T	3½	2,750	165	Savg*	p-stl	s-flx.	s....	36x5	36x5d	c-s.	Bud.	4-4½x5½-29.0	4	cent.	own.	cel-cst.	sing.	Bosch.	hand.	.....	.....	.....	suct.	Ruggles.	otor
Republic	V	5	4,250	160	.....	p-stl	s-flx.	s....	36x5	40x6d	c-s.	Bud.	4-4½x6 -32.4	4	cent.	own.	cel-cst.	sing.	Bosch.	hand.	.....	.....	.....	cent.	Duplex.	motor
Reya	18	1	995	117	.....	p-stl	rigid.	pnu.	31x4	31x4	wd.	GBS.	4-3½x4½-22.5	4	ther.	Kunz	cel-ps.	dual.	Spltf.	hand.	sl&i 2.	Dynt.	stk.	.....	.....	.....
Riker	B	3	3,900	150	Prsh.	p-stl	rigid.	s....	36x5	36x5d	wd*	own.	4-4¼x6 -28.9	2	cent.	own.	fin-cst.	dual.	Bosch.	hand.	s&l 2.	West.	250	l-b.	own.	motor
Riker	BB	4	4,050	150	Prsh.	p-stl	rigid.	s....	36x5	36x6d	wd*	own.	4-4¼x6 -28.9	2	cent.	own.	fin-cst.	dual.	Bosch.	hand.	s&l 2.	West.	250	l-b.	own.	motor
Rowe	CDW	2	2,800	142	own.	rol-c.	.....	s....	34x4	36x3½*	wd.	.....	4-4 x5 -25.6	4	cent.	.....	.....	.....	Bosch.	.....	.....	.....	.....	.....	.....	.....
Rowe	CDW	2½	3,000	164	own.	rol-c.	.....	s....	34x4	36x4*	wd.	.....	4-4 x5 -25.6	4	cent.	.....	.....	.....	Bosch.	.....	.....	.....	.....	.....	.....	.....
Rowe	DEW	3½	3,400	156	own.	rol-c.	.....	s....	36x5	36x5d	wd.	.....	4-4 x6 -25.6	2	cent.	.....	.....	.....	Bosch.	.....	.....	.....	.....	.....	.....	.....
Rowe	GW	5	4,500	171	own.	rol-c.	.....	s....	36x6	36x6d	wd.	.....	4-4¾x5½-36.2	2	cent.	.....	.....	.....	Bosch.	.....	.....	.....	.....	.....	.....	.....
Royal	.....	1	.....	124*	.....	.....	.....	s....	34x4	34x5	....	Wis.	4-3½x5 -16.9	4	.....	.....	.....	sing.	Bosch.	fix.	.....	.....	.....	suct.	Mnrch.	motor
Royal	.....	2	.....	132*	.....	.....	.....	s....	36x4½	36x6	....	Wis.	4-4 x6 -25.6	4	.....	.....	.....	sing.	Bosch.	fix.	.....	.....	.....	suct.	Mnrch.	motor
Royal	.....	3½	.....	158*	.....	.....	.....	s....	36x5	38x5d	....	Wis.	4-4½x6 -29.0	4	.....	.....	.....	sing.	Bosch.	fix.	.....	.....	.....	suct.	Mnrch.	motor

ABBREVIATIONS—Types of Construction

*Other Options
amid—amidships
auto—automatic
c—center
c&l—center and left
c-s—cast steel
cent—centrifugal
cel-cst—cellular core cast case
cel-sht—cellular core sheet case
cylinders cast, 2 in pairs
cylinders cast, 4 in block
cylinders cast, 3 in threes
cylinders cast, 1 singly
d—dual
d-d—dry disk
d-p—dry plate
d-rd—double reduction
elec—electric
ext-dst—external drive-shaft
ext-f-s—external front wheels.
ext-jst—external jack-shaft
ext-r-w—external rear wheel
fab—fabric
fin-sht—finned tube core sheet case
fix—fixed
flex—flexible
fric—friction
gset—gearset
grav—gravity
hyd—hydraulic
ind-c—individual clutch
int-dst—internal drive-shaft
int-f-w—internal front wheels
in-g—internal gear
in-g-4—internal gear drive on 4 wheels
int-r-w—internal rear wheel
jst—unit with jackshaft
l—left
ltg—lighting
metl—metal
mtr—unit with motor
opt—optional
pist—piston pump
plan—planetary
pnu—pneumatic
pres—pressure
prog—progressive sliding gear
p-stl—pressed steel
r—right
r-a—unit with rear axle
ring-cst—ring core cast case
rol-c—rolled channel
rol-i—rolled I-beam
r-rd—radius rods
selec—selective sliding gear
s-flx—semi-flexible
s & l—starting and lighting
s, l & i—starting, lighting and ignition
s, l & i 2—starting, lighting and ignition two-unit
sing—single
s—solid
spgs—springs
sq-t-sht—square tube core sheet case
stk—stock
sub-f—sub-frame
ther—thermo-syphon
tor-a—torque arm
tor-t—torsion tube
vacm—vacuum
wd—wood
w-d—multiple disk in oil
worm—top worm
w-p—wet plate
zz-t-sht—zig-zag tube core sheet case

Prices are exclusive of the 3 per cent. Government war tax

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Commercial Vehicles for 1918—Continued

ENGINE				TRANSMISSION											BRAKES		CONTROL			UNIVERSALS		
SPEED		FUEL SYS.		CLUTCH		GEARSET				FINAL DRIVE							STEERING GEAR					
Motor in R. P. M.	Truck in M.p.h.	Carbureter Make	Fuel Feed	Type	Make	Type	Make	Placed	Speeds	Type	Axle Make	Total Gear Reduction	Propulsion Taken By	Torque Taken By	Make Springs	Foot	Hand	Placed	Make	Levers	Type	Make	Name and Model
1,280	18	Mastr*	grav.	d-d.	own.	selec.	own.	amid.	4	worm	Timkn.	7.0	r-rd.	spgs.	own.	int-r-w.	int-r-w.	l.	Ross.	c.			Moreland
1,090	18	Mastr*	grav.	d-d.	own.	selec.	own.	amid.	4	worm	Timkn.	6.8	r-rd.	spgs.	own.	int-r-w.	int-r-w.	l.	Ross.	c.			Moreland
		Mastr*	grav.	d-d.	B-Lipe.	selec.	B-Lipe.	amid.	4	worm	Timkn.	7.8	r-rd.	spgs.	own.	int-r-w.	int-r-w.		Ross.	c.			Moreland
		Mastr*	grav.	d-d.	B-Lipe.	selec.	B-Lipe.	amid.	4	worm	Timkn.	10.25	r-rd.	spgs.	own.	int-r-w.	int-r-w.	l.	Ross.	c.			Moreland
1,230	16	Stewrt.	grav.	d-d.	Fuller.	selec.	Fuller.	mtr.	3	in-g.	Torb.	8.0	spgs.	spgs.		int-r-w.	ext-r-w.	l.	Lavn.	c.	metl.	Arvac.	Muskegon 20
1,345	20	Stmbg.	grav.	d-p.	B-Beck.	selec.	Dtrt.	mtr.	3	in-g.	Buch.	6.8	spgs.	spgs.		ext-d-s.	ext-r-w.	l.	Jacx.	c.		own.	Nash 2017
1,191	15	Stmbg.	grav.	d-p.	B-Beck.	selec.	own.	amid.	4	in-g.	own.	8.5	spgs.	spgs.	Mthr.	ext-d-s.	int-4-w.	l.	Lavn.	c.		own.	Nash 4017
1,100	18	Stmbg.	grav.	d-d.	B-Lipe.	selec.	B-Lipe.	mtr.	3	worm	Timkn.	7.0	spgs.	spgs.	Tut.	int-r-w.	int-r-w.	r.	Lavn.	c.			Nelson & LeMoon E
1,100	18	Stmbg.	grav.	d-d.	B-Lipe.	selec.	B-Lipe.	mtr.	3	worm	Timkn.	7.0	spgs.	spgs.	Tut.	int-r-w.	int-r-w.	r.	Lavn.	c.			Nelson & LeMoon E
1,100	14	Stmbg.	grav.	d-d.	B-Lipe.	selec.	B-Lipe.	mtr.	4	worm	Timkn.	8.75	spgs.	spgs.	Tut.	int-r-w.	ext-r-w.	r.	Lavn.	c.			Nelson & LeMoon E
1,050	11	Stmbg.	grav.	d-d.	B-Lipe.	selec.	B-Lipe.	mtr.	4	worm	Timkn.	11.33	spgs.	spgs.	Tut.	int-r-w.	int-r-w.	r.	Lavn.	c.			Nelson & LeMoon
1,800		Zenith.	grav.	d-d.	B-Lipe.	selec.	B-Lipe.	mtr.	3	worm	Timkn.	8.5	spgs.	spgs.	Perf.	int-r-w.	int-r-w.	l.	Ross.	c.	metl.	Hart.	Netco D
1,400	18	Stmbg.	grav.	d-p.		id-c.		mtr.	3	worm		7.7	r-rd.	spgs.		int-r-w.	int-r-w.						New York M
1,100	15	Stmbg.	grav.	d-p.		id-c.		mtr.		worm			r-rd.	spgs.		int-r-w.	int-r-w.						New York N
1,573	25	Stmbg.	grav.	d-d.	Covert.	selec.	Covert.	mtr.	3	worm	Timkn.	6.5	spgs.	spgs.		int-r-w.	int-r-w.		Gem				Niles B
1,173	15	Stmbg.	grav.	d-p.	B-Beck.	selec.	Covert.	amid.	3	worm	Timkn.	8.5	r-rd.	spgs.		int-r-w.	int-r-w.		Gem				Niles E
1,300	16	Stmbg.			B-Beck.		Cotta.		3	worm	Shel.	8.75			Kal.				Ross.		metl.	Blood.	Noble NW
1,900	20	Carter.	grav.	cone.	Lyc.	selec.	G-Lees.	mtr.	3	bevel.	Salby.	6.0	t-tb.	t-tb.	Tut.	int-r-w.	ext-r-w.	l.	CAS.	c.			Old Hickory M
		Stmbg.	grav.	d-d.	B-Lipe.	selec.	B-Lipe.	mtr.	3	worm		7.7	spgs.	spgs.		int-r-w.	int-r-w.		Ross.		metl.	Spicer.	Old Reliable
		Stmbg.	grav.	d-d.	B-Lipe.	selec.	B-Lipe.	mtr.	3	worm	Shel.	7.7	spgs.	spgs.		int-r-w.	int-r-w.		Ross.		metl.	Spicer.	Old Reliable
		Stmbg.	grav.			selec.	DSOC.	jst.	3	chn.	SA&P.		r-rd.			int-r-w.	ext-j-s.		Ross.		metl.	Hart.	Old Reliable
		Stmbg.	grav.	d-d.		selec.	B-Lipe.	mtr.	3	worm	Shel.	8.7	spgs.	spgs.		int-r-w.	int-r-w.		Ross.		metl.	Spicer.	Old Reliable
		Stmbg.	grav.	d-d.		selec.	B-Lipe.	amid.	4	worm	Shel.	8.7	spgs.	spgs.		int-r-w.	int-r-w.		Ross.		metl.	Spicer.	Old Reliable
		Stmbg.	grav.	d-d.		selec.		amid.	3	chn.	Shel.		r-rd.			ext-.	int-.		Ross.		metl.	Hart.	Old Reliable
		Stmbg.	grav.	d-d.	D-Seab.	selec.		amid.	3	chn.			r-rd.			ext-r-w.	int-j-s.				metl.	Hart.	Old Reliable
		Stmbg.	grav.	d-d.		selec.		jst.	4	chn.			r-rd.			int-r-w.	ext-j-s.				metl.	Hart.	Old Reliable
980	16	Stmbg.	grav.	w-d.	M-Evn.	id-c.	Cotta.	amid.	3	worm	Timkn.	8.7	r-rd.	spgs.	Mthr.	int-r-w.	int-r-w.	l.	Ross.	c.	metl.	Spicer.	Oneida A
1,040	15	Stmbg.	grav.	w-d.	M-Evn.	id-c.	Cotta.	amid.	3	worm	Timkn.	9.2	r-rd.	spgs.	Mthr.	int-r-w.	int-r-w.	l.	Ross.	c.	metl.	Spicer.	Oneida B
970	14	Stmbg.	grav.	w-d.	M-Evn.	id-c.	Cotta.	amid.	3	worm	Timkn.	9.2	r-rd.	spgs.	Mthr.	int-r-w.	int-r-w.	l.	Ross.	c.	metl.	Spicer.	Oneida C
1,150	12	Stmbg.	grav.	w-d.	M-Evn.	id-c.	Cotta.	amid.	3	worm	Timkn.	10.3	r-rd.	spgs.	Mthr.	int-r-w.	int-r-w.	l.	Ross.	c.	metl.	Spicer.	Oneida D
		Tiltsn.	vacm.	cone.	own.	selec.	own.	r-ax.	3	bevel.	own.	4.3	t-tb.	t-tb.	Perf.	int-r-w.	ext-r-w.	l.	own.	c.			Overland
		Tiltsn.	grav.	cone.	own.	selec.	own.	r-ax.	3	bevel.	own.	4.4	t-tb.	t-tb.	Perf.	int-r-w.	ext-r-w.	l.	own.	c.			Overland
1,000	16	own.	pres.	d-d.	own.	selec.	own.	amid.	4	worm	own.	6.2	r-rd.	tor-a.		int-r-w.	ext-sht.		own.				Packard D
1,000	16	own.	pres.	d-d.	own.	selec.	own.	amid.	4	worm	own.	6.2	r-rd.	tor-a.		int-r-w.	ext-sht.		own.				Packard D
1,000	14	own.	pres.	d-d.	own.	selec.	own.	amid.	4	worm	own.	7.2	r-rd.	tor-a.		int-r-w.	ext-sht.		own.				Packard D
1,000	12	own.	pres.	d-d.	own.	selec.	own.	amid.	4	worm	own.	9.0	r-rd.	tor-a.		int-r-w.	ext-sht.		own.				Packard D
1,000	12	own.	pres.	d-d.	own.	selec.	own.	amid.	4	worm	own.	10.0	r-rd.	tor-a.		int-r-w.	ext-sht.		own.				Packard D
1,000	11	own.	pres.	d-d.	own.	selec.	own.	amid.	4	worm	own.	10.7	r-rd.	tor-a.		int-r-w.	ext-sht.		own.				Packard
1,000	11	own.	pres.	d-d.	own.	selec.	own.	amid.	4	worm	own.	10.7	r-rd.	tor-a.		int-r-w.	ext-sht.		own.				Packard
1,500	25	Carter.	grav.		own.	fric.	own.	jst.	3	chn.	own.	4.0	r-rd.		Tut.	r-w.	int-.	l.	own.	l.			Packet
		Stmbg.	grav.	w-d.	Fuller.	prog.	Fuller.			in-g.	Torb.		r-rd.	tor-t.	Chmp.	int-r-w.			Ross.		metl.	Blood.	Palmer
1,000	15	Stmbg.	grav.	w-d.	Fuller.	prog.	Fuller.			worm	Timkn.		r-rd.	tor-t.	Chmp.	int-r-w.			Ross.		metl.	Blood.	Palmer
925	16	Stmbg.	grav.	cone.	own.	selec.	B-Lipe.	amid.	3	worm	Timkn.	6.2	spgs.	spgs.	Std.	int-r-w.	ext-r-w.	r.	own.	r.	metl.	Spicer*	Peerless TC
925	15	Stmbg.	grav.	cone.	own.	selec.	own.	jst.	4	chn.	own.	7.4	r-rd.		Std.	int-r-w.	ext-j-s.	r.	own.	r.	metl.	Spicer*	Peerless TC
925	13	own.	gray.	cone.	own.	selec.	own.	jst.	4	chn.	own.	8.6	r-rd.		own.	int-r-w.	ext-j-s.	r.	own.	r.	metl.	Spicer*	Peerless TC
925	11	Stmbg.	grav.	cone.	own.	selec.	own.	jst.	4	chn.	own.	10.4	r-rd.		own.	int-r-w.	ext-j-s.	r.	own.	r.	metl.	Spicer*	Peerless TC
925	11	Stmbg.	grav.	cone.	own.	selec.	own.	jst.	4	chn.	own.	10.4	r-rd.		own.	int-r-w.	ext-j-s.	r.	own.	r.	metl.	Spicer*	Peerless TC
1,050	16	own.	grav.	cone.	own.	selec.	own.	amid.	4	worm	own.		r-rd.	tor-a.	own.	int-r-w.	ext-d-s.	r.	own.	r.		own.	Pierce-Arrow
950	14	own.	grav.	cone.	own.	selec.	own.	amid.	3	worm	own.		r-rd.	tor-a.	own.	int-r-w.	ext-d-s.	r.	own.	r.		own.	Pierce-Arrow
1,050	12				B-Beck.		Warner					9.9											Pull-More
		Zenith.	vacm.	d-p.	B-Beck.	selec.	G-Lees.	mtr.	3	worm	Timkn.	5.8	spgs.	spgs.	Perf.	int-r-w.	int-r-w.	l.	Lavn.	r.	metl.	Arvac.	Rainier R
1,200	18	Stmbg.	vacm.	d-d.	Warner	selec.	Warner	amid.	4	worm	Wis.	8.6	spgs.	spgs.	Rowl.	int-r-w.	int-r-w.	l.	Lavn.	c.	metl.	Hart.	Rennoc-Leslie
1,200	18	Stmbg.	vacm.	d-d.	Warner	selec.	Warner	amid.	4	worm	Wis.	8 6	spgs.	spgs.	Rowl.	int-r-w.	int-r-w.	l.	Lavn.	c.	metl.	Hart.	Rennoc-Leslie Tractor
		Jhnson	grav.	d-d.	own.	selec.	own.	amid.	3	bevel.	own.	4.3	spgs.	tor-a.	Penn.		dual-rw	l.	own.		fab*	Roid*	Reo F
1,250	14	Jhnson	grav.	d-d.	own.	selec.	own.	amid.	3	chn.	own.	8.8	r-rd.		Penn.	ext-r-w.	ext-j-s.	l.	own.	c.	fab*	Roid*	Reo J
900	20	Marvel.	grav.	d-d.	Covert.	selec.	Covert.	mtr.	3	in-g.	Torb.	5.4	spgs.	spgs.	Dtrt.	ext-sht.	ext-r-w.	l.	Jacx.	c.	metl.	Univ.	Republic
900	17	Marvel.	grav.	d-d.	Covert.	selec.	Covert.	mtr.	3	in-g.	Torb.	6.7	spgs.	spgs.	Dtrt.	ext-sht.	ext-r-w.	l.	Jacx.	c.	metl.	Univ.	Republic
950	17	Stmbg.	grav.	d-d.	Fuller.	selec.	Fuller.	mtr.	3	in-g.	Torb.	7.2	spgs.	spgs.	Dtrt.	int-r-w.	ext-r-w.	l.	Jacx.	c.	metl.	Arvac.	Republic 10
980	15	Stmbg.	grav.	d-d.	Fuller.	selec.	Fuller.	mtr.	3	in-g.	Torb.	8.0	spgs.	spgs.	Dtrt.	int-r-w.	ext-r-w.	l.	Jacx.	c.	metl.	Arvac.	Republic 11
980	12	Stmbg.	grav.	d-d.	Fuller.	selec.	Fuller.	mtr.	3	in-g.	Torb.	8.0	spgs.	spgs.	Dtrt.	int-r-w.	ext-r-w.	l.	Jacx.	c.	metl.	Arvac.	Republic A
1,050	11	Stmbg.	grav.	d-d.	Muncie	selec.	Muncie	mtr.	4	in-g.	Clfr.	10.0	spgs.	spgs.	Shel.	int-r-w.	ext-r-w.	l.	Ross.	c.	metl.	K-B.	Republic T
1,021	10	Zenith.	grav.	d-d.	B-Beck.	selec.	B-Beck.	amid.	4	in-g.	Clfr.	12.5	spgs.	spgs.	Shel.	int-r-w.	int-r-w.	l.	Ross.	c.			Republic V
		Schblr.	grav.	w-d.		selec.		mtr.	3	bevel.	Peru.	4.7	spgs.	spgs.	Kal.	int-r-w.	ext-r-w.	l.	Gem.	c.			Reya 18
1,350	14	Ball.	grav.	cone.	own.	selec.	own.	amid.	4	worm	own.	10.0	r-rd.	tor-a.	S-P.	int-r-w.	ext-d-s.	r.	Ross.	r.		own.	Riker B
1,350	14	Ball.	grav.	cone.	own.	selec.	own.	amid.	4	worm	own.	10.0	r-rd.	tor-a.	S-P.	int-r-w.	int-d-s.	r.	Ross.	r.		own.	Riker BB
	15	Rayfld*	grav.	d-d.		selec.		mtr.	4	worm								l.		c.	metl.	M-E.	Rowe CDW
	15	Rayfld*	grav.	d-d.		selec.		mtr.	4	worm								l.		c.	metl.	M-E.	Rowe CDW
	12	Rayfld*	grav.	d-d.		selec.		mtr.	4	worm								l.		c.	metl.	M-E.	Rowe DEW
	10	Rayfld*	grav.	d-d.		selec.		mtr.	4	worm								l.		c.	metl.	M-E.	Rowe GW
*1,600	25*	Master.	grav.	d-p.		id-c.		amid.	3	worm	Shel*		spgs.	spgs.		int-r-w.	int-r-w.		Ross				Royal
1,600	18	Master.	grav.	d-p.		id-c.		amid.	3	worm	Shel*		spgs.	spgs.		int-r-w.	int-r-w.		Ross				Royal
1,600	15	Master	grav.	d-p.		id-c.		amid.	3	worm	Tim.kn*		spgs.	spgs.		int-r-w.	int-r-w.		Ross				Royal

ABBREVIATIONS—Makers of Parts

*Other Options
A-K—Atwater-Kent
Aut-L—Auto-Lite
B-Beck—Borg & Beck
B-Lipe—Brown-Lipe
Brm—Bremer
Bud—Buda
Brem—Bremer
Can—Candler
Celfr—Celfor
Chgo—Chicago
Con—Continental
Conn—Connecticut
Dtrt—Detroit
Dynt—Dyneto
Eismn—Eisemann
E-M—English & Mersick
Eur—Eureka
Fed—Fedders
Franck—Francke
G&O—G & O Mfg. Co.
GBS—Golden, Belknap & Swartz
G-C—Garden City
Gem—Gemmer
Har—Harrison
Hart—Hartford
Hays—Hayes
Hig—Higgins
H-Shaw—Hele-Shaw
H-S—Herschell-Spillman
Idl—Ideal
Iron—Iron City
Jacx—Jackson-Church-Wilcox
Jhnson—Johnson
Kal—Kalamazoo
K-B—Kinsler-Bennett
Key-H—Keystone-Hindley
Lavn—Lavigne
LeR—LeRoi
Lgt—Light
Ligt—Liggett
Lyc—Lycoming
M'C—McCord
Merl—Merrill
Mil—Milwaukee
Murch—Monarch
Mthr—Mather
Natl—National
N. A.—North American
P & B—Parish & Bingham
Perf—Perfection
Prsh—Parish
R-T—Rome-Turney
Rayfld—Rayfield
Rowl—Wm. Harvey Rowland
Russl—Russel
Rut—Rutenber
Salsby—Salisbury
Savg—Savage Arms
Schblr—Schebler
Shel—Sheldon
Shkspr—Shakespeare
Smth—A. O. Smith
S-P—Spring-Perch
Spltf—Splitdorf
Stewrt—Stewart
Stmbg—Stromberg
Sundmn—Sunderman
S_W—Sparks-Withington
Ther—Thermoid
Timkn—Timken
Torb—Torbenson
Tut—Tuthill
Univ—Universal Machine Co.
Wau—Waukesha
Wilcx—Wilcox
Wis—Wisconsin

Prices are exclusive of the 3 per cent Government war tax

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Technical Specifications of Gasoline

Name and Model	Tons Capacity	Chassis Price	Wheelbase, Inches	FRAME			TIRES			Wheels	ENGINE																
							Sizes in Ins.							COOLING			IGNITION			ELEC. SYSTEM			GOVERNOR				
				Make	Material	Type	Kind	Front	Rear		Make	No. Cyl. Bore and Stroke—N.A.C.C., Hp.	Cylinders Cast	Water Circ.	Radiator Make	Radiator Core and Case	Type	Make	Spark Advance	Type	Make	Extra Cost	Type	Make	Drive		
Royal	5	.....	168*	.....	.....	.....	s....	36x6	40x6d	....	Wis..	4-4½x5½-36.2	2	.....	.....	.....	sing..	Bosch.	fix...	.....	.....	....	suct..	Mnrch..	motor.		
Royal	6	.....	158*	.....	.....	.....	s....	36x6	40x6d	....	Wis..	4-5½x6*-42.2*	2	.....	.....	.....	sing..	Bosch.	fix...	.....	.....	....	suct..	Mnrch..	motor.		
Royal	7	.....	158*	.....	.....	.....	s....	36x7	40x7d	....	Wis..	4-5½x7 -44.2	2	.....	.....	.....	sing..	Bosch.	fix...	.....	.....	....	suct..	Mnrch..	motor.		
Rush.....D	½	895	105	.....	.....	.....	pnu..	31x4	31x4	....	Lyc..	4-3½x5 -16.9	4	.....	.....	.....	sing..	Conn..	hand.	s&l...	Spltf..	....	.....	.....	.....		
Sandow.....A	1	1,485	120	.....	p-stl.	flex..	opt..	31x4	34x4	wd..	Con..	4-3½x5 -19.6	4	ther....	Brem	cel-cst...	sing..	Eismn	auto.	.....	.....	....	.....	.....	.....		
Sandow.....B	2	2,450	165	.....	p-stl.	s-flx..	s....	36x5	36x5d	wd..	Con..	4-4½x5½-27.2	4	ther....	Brem	fin-sht...	sing..	Bosch.	auto.	.....	.....	....	suct..	Mnrch..	motor.		
Sandow.....B	1½	1,875	138	.....	p-stl.	.....	s....	34x4	34x5	....	Con..	4-3½x5 -19.6	4	ther....	.....	.....	.....	.....	auto.	.....	.....	....	.....	.....	.....		
Sandow.....E	3½	3,450	175*	.....	rol-c.	.....	s....	36x5	36x5d	wd..	Con..	4-4½x5½-32.4	....	cent....	.....	.....	sing..	Bosch.	.....	.....	.....	....	suct..	.....	motor.		
Sanford.....W15	1½	2,200	140	Prsh..	p-stl.	s-flx..	s....	36x3½	36x5	wd..	Con..	4-3½x5½-22.5	4	cent...	M'C.	fin-cst...	sing..	Bosch.	fix...	s&i 2.	Remy.	stk..	cent..	Pierce...	motor.		
Sanford.....W25	2½	2,800	156	Prsh..	p-stl.	s-flx..	s....	36x4	36x4d	wd..	Con..	4-4½x5½-27.2	4	cent...	M'C.	fin-cst...	sing..	Bosch.	fix...	none..	none..	.....	cent..	Pierce...	motor.		
Sanford.....W35	3½	3,600	174	Prsh..	p-stl.	s-flx..	s....	36x5	36x5d	wd..	Bud..	4-4½x6 -32.4	4	cent...	M'C.	fin-cst...	sing..	Bosch.	fix...	none..	none..	.....	cent..	Pierce...	motor.		
Schleicher	3	3,500	150*	.....	.....	.....	s....	34x4½	34x3½d	....	Con..	4-4½x5½-29.0	2	.....	.....	.....	.....	Bosch.	hand.	.....	.....	.....	.....	opt.....	.....		
Schleicher	5	4,500	150*	.....	.....	.....	s....	34x5	34x4d	....	Con..	4-5 x6 -40.0	2	.....	.....	.....	.....	Bosch.	hand.	.....	.....	.....	.....	.....	.....		
Selden.....G	4½	.....	110	P&B..	p-stl.	s-flx..	pnu..	32x3½	33x4	wd..	LeR..	4-3½x4½-15.6	4	ther....	Bush.	fin-sht...	sing..	Eismn	fix...	s&l 2..	A-C...	opt.	cent..	LeR....	motor.		
Selden.....TXL	1	.....	140	P&B..	p-stl.	s-flx..	s....	34x3	34x4	wd..	Con..	4-3½x5 -19.6	4	ther....	Bush.	fin-sht...	sing..	Bosch.	fix...	s&l 2..	N-E..	opt.	cent..	Pierce...	motor.		
Selden.....B	2	.....	162	P&B..	p-stl.	s-flx..	s....	36x4	36x6	wd..	Con..	4-4½x5½-27.2	4	cent...	Bush.	fin-sht...	sing..	Bosch.	fix...	s&l 2..	N-E..	opt.	cent..	Pierce...	motor.		
Selden.....BR	2½	.....	162	P&B..	p-stl.	s-flx..	s....	36x4	36x6	wd..	Con..	4-4½x5½-27.2	4	cent...	Bush.	fin-sht...	sing..	Bosch.	fix...	s&l 2..	N-E..	opt.	cent..	Pierce...	motor.		
Selden.....C	3½	.....	180	P&B..	p-stl.	s-flx..	s....	36x5	36x5d	wd..	Con..	4-4½x5½-32.4	2	cent...	Bush.	fin-cst...	sing..	Eismn	hand.	s&l 2..	N-E..	opt.	cent..	Pierce...	motor.		
Selden.....D	5	.....	169	P&B..	p-stl.	s-flx..	s....	36x6	40x6d	met.	Con..	4-4½x5½-36.1	2	cent...	Bush.	fin-cst...	sing..	Eismn	hand.	s&l 2..	N-E..	opt.	cent..	Pierce...	motor.		
Service.....220	1	1,500	137	.....	p-stl.	s-flx..	opt..	34x3	34x4	wd..	Bud..	4-3½x5½-19.6	4	ther....	Long.	fin-cst...	sing..	Eismn	hand.	s&l 2*.	West*.	120*	none	none....	none..		
Service.....230	1½	2,200	150	.....	p-stl.	s-flx..	s....	36x3½	36x5	wd..	Bud..	4-4 x5½-25.6	4	cent...	Long.	fin-cst...	sing..	Eismn	hand.	s&l 2*.	West*.	140*	cent..	Duplex..	motor.		
Service.....240	2	2,500	160	.....	p-stl.	s-flx..	s....	36x4	36x7	wd..	Bud..	4-4½x5½-28.9	4	cent...	Long.	fin-cst...	sing..	Eismn	hand.	s&i2*..	West*.	140*	cent..	Duplex..	motor.		
Service.....270	3½	3,300	171	.....	p-stl.	s-flx..	s....	36x5	36x5d	wd..	Bud..	4-4½x5½-28.9	4	cent...	Long.	fin-cst...	sing..	Eismn	hand.	s&l 2*.	West*.	140*	cent..	Duplex..	motor.		
Service.....275	3½	3,600	171	.....	p-stl.	s-flx..	s....	36x6	36x6d	wd..	Bud..	4-4½x6 -32.4	4	cent...	Long.	fin-cst...	sing..	Eismn	auto.	s&l 2*.	West*.	140*	cent..	Duplex..	motor.		
Service.....300	5	4,300	171½	.....	p-stl.	s-flx..	s....	36x6	40x6d	wd..	Bud..	4-4½x6 -32.4	4	cent...	Long.	fin-cst...	sing..	Eismn	auto.	s&l 2*.	West*.	140*	cent..	Duplex..	motor.		
Signal.....F	1¼	1,875	144	Prsh..	p-stl.	s-flx..	s....	34x3½	36x5	wd..	Con..	4-3½x5½-22.5	4	cent...	M'C.	fin-cst...	sing..	Eismn	fix...	none..	none..	.....	suct..	Mnrch..	motor.		
Signal.....H	2	2,375	144	Prsh..	p-stl.	s-flx..	s....	34x4	36x6	wd..	Con..	4-4½x5½-27.2	4	cent...	M'C.	fin-cst...	sing..	Eismn	fix...	none..	none..	.....	suct..	Mnrch..	motor.		
Signal.....J	2½	2,835	150	Prsh..	p-stl.	s-flx..	s....	34x4	36x8	wd..	Con..	4-4½x5½-27.2	4	cent...	M'C.	fin-cst...	sing..	Eismn	fix...	none..	none..	.....	suct..	Mnrch..	motor.		
Signal.....M	4	3,825	168	Prsh..	p-stl.	s-flx..	s....	36x5	40x5d	wd..	Con..	4-4½x5½-32.4	2	cent...	M'C.	fin-cst...	sing..	Eismn	fix...	none..	none..	.....	suct..	Mnrch..	motor.		
Signal.....R	5	4,475	180	Prsh..	p-stl.	s-flx..	s....	36x6	40x6d	wd..	Con..	4-4½x5½-32.4	2	cent...	M'C.	fin-cst...	sing..	Eismn	fix...	none..	none..	.....	suct..	Mnrch..	motor.		
Standard.....70	2	2,500	140	.....	rol-c.	s-flx..	s....	36x4	36x5	wd..	Con..	4-4½x5½-27.2	4	cent...	Long.	fin-cst...	sing..	Eismn	fix...	.....	.....	.....	cent..	Pierce...	motor.		
Standard.....65	3½	3,200	156	.....	rol-c.	s-flx..	s....	36x5	36x5d	wd..	Con..	4-4½x5½-32.4	2	cent...	Long.	fin-cst...	sing..	Eismn	auto.	.....	.....	.....	cent..	Pierce...	motor.		
Standard.....85	5	4,000	156	.....	rol-c.	s-flx..	s....	36x6	40x6d	wd..	Con..	4-4½x5½-32.4	2	cent...	Long.	fin-cst...	sing..	Eismn	auto.	.....	.....	.....	cent..	Pierce...	motor.		
Steele.....C	2	2,250	115*	.....	.....	.....	s....	38x5	40x4d	....	Con..	4-4½x5½-27.2	4	.....	.....	.....	sing..	A-Kt..	auto.	ltg....	Carl..	.....	cent..	own.....	motor.		
Steele.....B	3	3,000	127*	.....	.....	.....	s....	38x6	40x5d	....	own..	4-5 x5 -40.0	2	.....	.....	.....	sing..	A-Kt..	auto.	ltg....	Carl..	.....	cent..	own.....	motor.		
Steele.....BA	4	3,500	127*	.....	.....	.....	s....	38x6	40x5d	....	own..	4-5 x5 -40.0	2	.....	.....	.....	sing..	A-Kt..	auto.	ltg....	Carl..	.....	cent..	own.....	motor.		
Steele.....A	5	4,000	127*	.....	.....	.....	s....	38x7	40x6d	....	own..	4-5 x5 -40.0	2	.....	.....	.....	sing..	A-Kt..	auto.	ltg....	Carl..	.....	cent..	own	motor.		
Stegeman	2	2,600	150	own...	p-stl.	flex..	s....	34x4	36x4d	wd..	Con..	6-3½x5½-29.4	4	cent...	Bush.	s-t-cst...	sing..	Dixie..	fix...	s&l 2..	West..	stk..	suct..	Mnrch..	motor.		
Stegeman	3	3,000	160	own...	p-stl.	flex..	s....	34x4	36x5d	wd..	Con..	6-3½x5½-29.4	4	cent...	Bush.	s-t-cst...	sing..	Dixie..	fix...	s&l 2..	West..	stk..	suct..	Mnrch..	motor.		
Stegeman	4	3,800	160	own...	p-stl.	flex..	s....	36x5	40x5d	wd..	Con..	6-3½x5½-33.8	3	cent...	Bush.	s-t-cst...	sing..	Dixie..	fix...	s&l 2..	West..	stk..	suct..	Mnrch..	motor.		
Stegeman	5	4,500	168	own...	p-stl.	flex..	s....	36x5	40x6d	wd..	H-S..	6-4 x5½-38.4	4	cent...	Bush.	s-t-cst...	sing..	Dixie..	fix...	s&l 2..	West..	stk..	suct..	Mnrch..	motor.		
Stegeman	7	5,000	168	own...	rol-c.	flex..	s....	36x6	40x7d	c-s..	H-S..	6-4 x5½-38.4	4	cent...	Bush.	s-t-cst...	sing..	Dixie..	fix...	s&l 2..	West..	stk..	suct..	Mnrch..	motor.		
Sterling	2½	2,950	156	Smth..	p-stl.	s-flx..	s....	36x4	36x4d	wd..	Wau..	4-4½x5½-28.9	2	cent...	Long.	fin-cst...	sing..	Eismn	auto.	none..	none..	none	cent..	Wau....	motor.		
Sterling	3½	3,900	162	Smth..	p-stl.	s-flx..	s....	36x5	40x5d	wd..	Wau..	4-4½x5½-28.9	2	cent...	Long.	fin-cst...	dual..	Eismn	auto.	ltg....	Vesta.	stk..	cent..	Wau....	motor.		
Sterling	5	4,750	168	Smth..	p-stl.	s-flx..	s....	36x6	40x6d	wd..	Wau..	4-4½x6½-36.1	2	cent...	Long.	fin-cst...	sing..	Eismn	auto.	ltg....	Vesta.	stk..	cent..	Wau....	motor.		
Sterling	7	5,250	168	Smth..	p-stl.	s-flx..	s....	36x6	40x7d	wd..	Wau..	4-4½x6½-36.1	2	cent...	Long.	fin-cst...	dual.	Eismn	hand.	ltg....	Vesta.	stk..	cent..	Wau....	motor.		
Stewart.....6	¾	845	110	.....	p-stl.	s-flx..	pnu..	32x4	32x4	wd..	Mil..	4-3½x4½-14.4	4	ther....	Bush.	fin-ps...	sing..	Brlng.	fix...	.....	.....	.....	.....	.....	.....		
Stewart.....9	1½	1,750	140	.....	p-stl.	.....	s....	34x3½	34x4	....	Con..	4-3½x5 -22.5	4	ther....	Bush.	fin-cst...	sing..	Brlng.	fix...	...-2...	West*.	125*	.....	.....	.....		
Stewart.....7	2	2,195	156	.....	p-stl.	.....	s....	34x4	34x4d	wd..	Bud..	4-4½x5½-27.2	4	cent...	Bush.	fin-cst...	sing..	Brlng.	fix...	.....	.....	.....	.....	Pierce...	.....		
Studebaker.....SF	½	945	112	own...	p-stl.	s-flx..	pnu..	35x4½	35x4½	wd..	own..	4-3½x5 -24.2	4	cent...	M'C.	cel-ps...	sing..	Remy.	hand.	sl&i 2.	Wag..	stk..	.....	.....	.....		
Studebaker.....7	1	1,350	125	own...	p-stl.	s-flx..	pnu..	35x5	35x5	wd..	own..	4-3½x5 -24.2	4	cent...	M'C.	cel-ps...	sing..	Remy.	hand.	sl&i 2.	Wag..	stk..	cent..	Pierce...	motor.		
Sullivan.....F	1½	2,150	129	.....	rol-c.	s-flx..	s....	36x3	36x5	wd..	Bud..	4-3½x4½-22.5	4	ther....	Bush.	fin-sht...	sing..	Bosch.	fix...	none..	none..	.....	none	none....	.....		
Sullivan.....E	2	2,600	150	.....	p-stl.	s-flx..	s....	36x4	36x6	wd..	Bud..	4-4½x5½-27.2	4	cent...	Bush.	fin-cst...	sing..	Bosch.	fix...	none..	none..	.....	none	none....	.....		
Superior.....A	1	1,500	124*	.....	.....	.....	s....	34x3½	34x4	....	Beav.	4-3½x5 -19.6	4	.....	.....	.....	sing..	Eismn	fix...	.....	.....	.....	suct..	Mnrch..	motor.		
Superior.....C	2	2,000	144	.....	.....	.....	s....	36x4	36x6	....	Beav.	4-3½x5 -22.5	4	.....	.....	.....	sing..	Eismn	fix...	.....	.....	.....	suct..	Mnrch..	motor.		
Taylor	1	1,750	134	.....	p-stl.	s-flx..	s....	34x4	34x5	wd..	Con..	4-3½x5 -19.6	4	cent...	Long.	fin-cst...	sing..	Eismn	hand.	.....	.....	.....	cent..	Pierce...	gset..		
Taylor	1½	2,200	142	.....	p-stl.	s-flx..	s....	34x4	34x6	wd..	Con..	4-3½x5 -22.5	4	cent...	Long.	fin-cst...	sing..	Eismn	hand.	.....	.....	.....	cent..	Pierce...	gset..		
Taylor	2½	2,900	145	.....	p-stl.	s-flx..	s....	36x4	36x7	c-s..	Con..	4-4½x5½-27.2	4	cent...	Long.	fin-cst...	dual..	Eismn	hand.	.....	.....	.....	cent..	Pierce...	gset..		
Taylor	3½	3,650	156	.....	p-stl.	s-flx..	s....	36x5	40x10	c-s..	Con..	4-4½x5½-32.4	4	cent...	Long.	fin-cst...	dual..	Eismn	hand.	.....	.....	.....	cent..	Pierce...	gset..		
Taylor	5	4,600	160	.....	p-stl.	.....	s....	36x6	40x14	c-s..	Con..	4-5½x5½-44.2	2	cent...	Long.	fin-cst...	dual..	Eismn	hand.	.....	.....	.....	cent..	Pierce...	gset..		
Thomas.....40	2	3,000	150	.....	p-stl.	rigid.	s....	34x5	34x4d	wd..	Bud..	4-4½x5½-28.9	4	cent...	.....	fin*-sht...	sing..	Sims..	fix...	ltg....	Bijur..	stk..	cent..	Pierce...	gset..		
Thomas.....70	3½	3,500	150	.....	p-stl.	rigid.	s....	34x5	34x5d	wd..	Bud..	4-4½x6 -28.9	4	cent...	.....	fin*-sht...	sing..	Sims..	fix...	ltg....	Bijur..	stk..	cent..	Pierce...	gset..		
Tiffin.....A	¾	1,190	110	.....	p-stl.	flex..	pnu..	35x4½	35x4½	wd..	Con..	4-3½x5 -19.6	4	ther....	Bush.	fin-sht...	sing..	Bosch.	hand.	none..	none..	.....	none	none....	none..		
Tiffin.....AW	1	1,550	112	.....	p-stl.	flex..	s....	34x3	34x4	wd..	Con..	4-3½x5 -19.6	4	ther....	Bush.	fin-sht...	sing..	Bosch.	hand.	none..	none..	.....	cent..	Pierce...	motor.		
Tiffin.....GW	1½	1,970	135	.....	p-stl.	flex..	s....	36x3½	36x5	wd..	Con..	4-3½x5½-22.5	4	cent...	Bush.	fin-sht...	sing..	Bosch.	hand.	none..	none..	.....	cent..	Pierce...	motor.		
Tiffin.....MC	2½	2,500	140	.....	p-stl.	s-flx..	s....	36x4	36x3½d	wd..	Con..	4-4½x5½-27.2	4	cent...	Bush.	fin-sht...	sing..	Bosch.	hand.	none..	none..	.....	cent..	Pierce...	motor.		
Tiffin.....MW	2½	2,700	140	.....	p-stl.	s-flx..	s....	36x4	36x3½d	wd..	Con..	4-4½x5½-27.2	4	cent...	Bush.	fin-sht...	sing..	Bosch.	hand.	none	none..	.....	cent..	Pierce...	motor.		
Tiffin.....PW	3½	3,400	156	.....	rol-c.	s-flx..	s....	36x5	36x5d	wd..	Con..	4-4½x5½-32.4	2	cent...	Bush.	fin-sht...	sing..	Bosch.	hand.	none..	none..	.....	cent..	Pierce...	motor.		
Tiffin.....RW	5	4,550	168	.....	rol-I.	rigid.	s....	36x5	40x5d	wd..	Con..	6-3½x5½-33.8	3	cent...	Bush.	fin-sht...	sing..	Bosch.	hand.	sl&i 2.	Spltf..	stk..	cent..	Pierce...	.....		
Tiffin.....SW	6	4,650	168	.....	rol-I.	rigid.	s....	36x6	36x6d	c-s..	Con..	6-3½x5½-33.8	3	cent...	Bush.	fin-sht...	sing..	Bosch.	hand.	sl&i2..	Spltf..	stk..	cent..	Pierce...	.....		
Titan	5	5,000	156	.....	p-stl.	s-flx..	s....	36x6	40x6d	c-s..	Bud..	4-4½x6 -32.4	4	cent...	Perf..	cel-cst...	sing..	Bosch.	hand.	ltg....	Bosch.	stk..	cent..	Simplex..	motor.		
Transport Tractor.....T	5	2,750	80	.....	rol-c.	rigid.	s....	34x3½	34x4d	wd..	.....	4-3½x5 -22.5	4	ther....	.....	cel-sht...	sing..	Bosch.	fix...	none..	none..	.....	suct..	Mnrch..	motor.		
Triangle.....A	1½	.....	144	.....	rol-c.	s-flx..	s....	34x3½	34x5	wd..	Wau..	4-3½x5½-22.5	4	cent...	.....	zz-t-...	sing..	Eismn	fix...	.....	.....	.....	cent..	Wau....	motor.		

ABBREVIATIONS—Types of Construction

***Other Options**
amid—amidships
auto—automatic
c—center
c&l—center and left
c-s—cast steel
cent—centrifugal
cel-cst—cellular core cast case
cel-sht—cellular core sheet case
cylinders cast, 2 in pairs
cylinders cast, 4 in block
cylinders cast, 8 in threes
cylinders cast, 1 singly
d-d—dry disk
d-p—dry plate
d-rd—double reduction
elec—electric
ext-dst—external drive-shaft
ext-f-s—external front wheels.
ext-jnt—external jack-shaft
ext-r-w—external rear wheel
fab—fabric
fin-sht—finned tube core sheet case
flx—fixed
d—dual
flex—flexible
fric—friction
gset—gearset
grav—gravity
hyd—hydraulic
ind-c—individual clutch
int-dst—internal drive-shaft
int-f-w—internal front wheels
in-g—internal gear
in-g-4—internal gear drive on 4 wheels
int-r-w—internal rear wheel
jst—unit with jackshaft
l—left
ltg—lighting
metl—metal
mtr—unit with motor
opt—optional
pist—piston pump
plan—planetary
pnu—pneumatic
pres—pressure
prog—progressive sliding gear
p-stl—pressed steel
r—right
r-a—unit with rear axle
ring-cst—ring core cast case
rol-c—rolled channel
rol-i—rolled I-beam
r-rd—radius rods
selec—selective sliding gear
s-flx—semi-flexible
s & l—starting and lighting
s, l & i—starting, lighting and ignition
s, l & i 2—starting, lighting and ignition two-unit
sing—single
s—solid
spgs—springs
sq-t-sht—square tube core sheet case
stk—stock
sub-f—sub-frame
ther—thermo-syphon
tor-a—torque arm
tor-t—torsion tube
vacm—vacuum
wd—wood
w-d—multiple disk in oil
worm—top worm
w-p—wet plate
zz-t-sht—zig-zag tube core sheet case

Prices are exclusive of the 3 per cent. Government war tax

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Commercial Vehicles for 1918—Continued

ENGINE				TRANSMISSION											BRAKES		CONTROL			UNIVERSALS		
SPEED		FUEL SYS.		CLUTCH		GEARSET				FINAL DRIVE							STEERING GEAR					
R.p.m.	Truck in M.p.h.	Carbureter Make	Fuel Feed	Type	Make	Type	Make	Placed	Speeds	Type	Axle Make	Total Gear Reduction	Propulsion Taken By	Torque Taken By	Make Springs	Foot	Hand	Placed	Make	Levers	Type	Make	Name and Model
900	10*	Master	grav	w-d		id-c		amid	3	worm	Timkn		spgs	spgs		int-r-w	int-r-w		Ross				Royal
900	10*	Master	grav	w-d		id-c		amid	3	worm*	Shel*		spgs*	spgs*		int-r-w	int-r-w		Ross				Royal
900	10*	Master	grav	w-d		id-c		amid	3	chn	Shel*		r-rd			int-r-w	int-r-w		Ross				Royal
600	29	Carter	grav	w-d	B-Beck	selec		mtr	3	bevl	own		spgs	tor-t		int-r-w	ext-r-w		Lavn				Rush D
		Stmbg	vacm	d-d	Fuller	selec	Fuller	mtr	3	worm	Timkn	6.5	spgs	spgs	Dtrt	int-r-w	int-	l	Ross	c			Sandow A
100	15	Stmbg	vacm	d-d	B-Lipe	selec	B-Lipe	mtr	3	worm	Timkn		spgs	spgs	Dtrt	int-r-w	int-r-w	r	Ross	r			Sandow B
		Stmbg		d-d		selec			3	worm	Timkn	8.7				int-r-w	int-r-w	l		c			Sandow B
	12	Stmbg		d-d		selec		mtr	3	worm	Timkn	8.8				int-r-w	int-r-w			c			Sandow E
200	16½	Stmbg	grav	d-d	B-Lipe	selec	B-Lipe	mtr	3	worm	Shel	7.8	spgs	spgs	Perf	int-r-w	int-r-w	l	Ross	c	metl	Spicer*	Sanford W15
100	15	Stmbg	grav	d-p	B-Beck	selec	Dtrt	amid	4	worm	Shel	8.7	spgs	spgs	Perf	int-r-w	int-r-w	l	Ross	c	metl	Spicer*	Sanford W25
100	13	Stmbg	grav	d-p	B-Beck	selec	Warner	amid	4	worm	Shel	8.8	spgs	spgs	Perf	int-r-w	int-r-w	l	Ross	c	metl	Spicer*	Sanford W35
200	25	Stmbg	grav				own			chn	own		r-rd			ext-r-w	ext-sht						Schleicher
200	20	Stmbg	grav	cone		selec	own	amid	4	chn	own		r-rd			ext-r-w	ext-sht						Schleicher
260	20	Schblr	grav	d-d	Dtrt	selec	Dtrt	mtr	3	worm	Shel	6.2	spgs	spgs	Perf	int-r-w	int-r-w	r	Lavn	c	metl	Arvac	Selden G
250	15	Stmbg	grav	d-d	Covt	selec	Covt	mtr	3	in-g	Russl	8.2	spgs	spgs	Perf	int-r-w	ext-r-w	r	Lavn	c	metl	Spicer	Selden TXL
295	15	Stmbg	grav	d-d	B-Lipe	selec	B-Lipe	mtr	3	worm	Timkn	9.3	spgs	spgs	Perf	int-r-w	int-r-w	r	Jacx	c	metl	Spicer	Selden B
295	15	Stmbg	grav	d-d	B-Lipe	selec	B-Lipe	mtr	3	in-g	Russl	9.3	spgs	spgs	Perf	int-r-w	ext-r-w	r	Jacx	c	metl	Spicer	Selden BR
250	13	Stmbg	grav	d-d	B-Lipe	selec	B-Lipe	amid	4	worm	Timkn	10.3	r-rd	spgs	Perf	int-r-w	int-r-w	r	Ross	c	metl	Spicer	Selden C
250	13	Stmbg	grav	d-d	B-Lipe	selec	B-Lipe	amid	4	worm	Timkn	13.7	r-rd	spgs	Perf	int-r-w	int-r-w	r	Ross	c	metl	Spicer	Selden D
100	16	Stmbg	vacm	d-d	Fuller	selec	Fuller	mtr	3	worm	Timkn	7.8	spgs	spgs	Shel	int-r-w	int-r-w	l	Ross	c	metl	Arvac	Service 220
200	15	Master	grav	d-p	B-Beck	selec	B-Lipe	amid	3	worm	Timkn	7.8	spgs	spgs	Kal	int-r-w	int-r-w	l	Ross	c	metl	Spicer	Service 230
200	15	Master	grav	d-p	B-Beck	selec	B-Lipe	amid	3	worm	Timkn	7.8	spgs	spgs	Kal	int-r-w	int-r-w	l	Ross	c	metl	Spicer	Service 240
100	13	Master	grav	d-p	B-Beck	selec	B-Lipe	amid	4	worm	Timkn	8.8	r-rd	tor-a	Shel	int-r-w	int-r-w	l	Ross	c	metl	Spicer	Service 270
000	13	Master	grav	d-p	B-Beck	selec	B-Lipe	amid	4	worm	Timkn	7.8	r-rd	tor-a	Shel	int-r-w	int-r-w	l	Ross	c	metl	Spicer	Service 275
000	12	Master	grav	d-p	B-Beck	selec	B-Lipe	amid	4	worm	Timkn	10.3	r-rd	tor-a	Shel	int-r-w	int-r-w	l	Ross	c	metl	Spicer	Service 300
085	15	Stmbg	grav	d-d	B-Lipe	selec	B-Lipe	mtr	3	worm	Timkn	7.8	r-rd	spgs	Perf*	int-r-w	int-r-w	l	Ross	c	metl	Spicer	Signal F
300	15	Stmbg	grav	d-d	B-Lipe	selec	B-Lipe	mtr	3	worm	Timkn	9.3	r-rd	spgs	Perf*	int-r-w	int-r-w	l	Ross	c	metl	Spicer	Signal H
300	15	Stmbg	grav	d-d	B-Lipe	selec	B-Lipe	amid	4	worm	Timkn	9.3	r-rd	spgs	Perf*	int-r-w	int-r-w	l	Ross	c	metl	Spicer	Signal J
300	15	Stmbg	grav	d-d	B-Lipe	selec	B-Lipe	amid	4	worm	Timkn	10.3	r-rd	spgs	Perf*	int-r-w	int-r-w	l	Ross	c	metl	Spicer	Signal M
721	15	Stmbg	grav	d-d	B-Lipe	selec	B-Lipe	amid	4	worm	Timkn	13.7	r-rd	spgs	Perf*	int-r-w	int-r-w	l	Ross	c	metl	Spicer	Signal R
050	15	Schblr	grav	d-p	B-Beck	selec	B-Lipe	amid	4	worm	Timkn	7.8	r-rd	spgs	Tut	int-r-w	int-r-w	l	Ross	c			Standard 70
050	12	Schblr	vacm	d-p	B-Beck	selec	B-Lipe	amid	4	worm	Timkn	10.3	r-rd	spgs	Tut	int-r-w	int-r-w	l	Ross	c			Standard 65
050	10	Schblr	vacm	d-p	B-Beck	selec	B-Lipe	amid	4	worm	Timkn	13.2	r-rd	spgs	Tut	int-r-w	int-r-w	l	Ross	c			Standard 85
150	14½	Stmbg		w-d	H-Shaw	id-c	Cotta	jst	3	chn	own	9.5	r-rd			int-	ext-		Ross				Steele C
950	11	Stmbg	grav	w-d	H-Shaw	id-c	Cotta	jst	3	chn	own	9.2	r-rd			int-	ext-		Ross				Steele B
950	11	Stmbg	grav	w-d	H-Shaw	id-c	Cotta	jst	3	chn	own	9.2	r-rd			int-r-w	ext-jst		Ross				Steele BA
950	9	Stmbg	grav		H-Shaw	id-c	Cotta	jst	3	chn	own	9.0	r-rd			int-r-w	ext-jst		Ross				Steele A
100	16	Rayfld	grav	d-d	B-Lipe	selec	B-Lipe	mtr	3	worm	own	9.6	r-rd	spgs	Shel	int-r-w	int-dst	l	Ross	l	metl	M-Evn	Stegeman
100	14	Rayfld	grav	d-d	B-Lipe	selec	B-Lipe	mtr	3	worm	own	10.7	r-rd	spgs	Shel	int-r-w	int-dst	l	Ross	l	metl	M-Evn	Stegeman
100	13	Rayfld	grav	d-d	B-Lipe	selec	B-Lipe	mtr	3	worm	own	11.3	r-rd	spgs	Shel	int-r-w	int-dst	l	Ross	l	metl	M-Evn	Stegeman
100	12	Rayfld	grav	d-d	B-Lipe	selec	B-Lipe	mtr	3	worm	own	12.7	r-rd	spgs	Shel	int-r-w	int-dst	l	Ross	l	metl	M-Evn	Stegeman
100	10	Rayfld	grav	d-d	B-Lipe	selec	B-Lipe	mtr	3	worm	own	15.0	r-rd	spgs	Shel	int-r-w	int-dst	l	Ross	l	metl	M-Evn	Stegeman
000	16	Zenith	vacm	d-d	B-Lipe	selec	Sterlg	mtr	3	worm	Shel	7.7	r-rd	spgs	Shel	int-r-w	int-r-w	l	Ross	c	metl	Spicer	Sterling
000	13*	Zenith	vacm	w-d	H-Shaw	ind-c	Cotta	amid	3	worm	Timkn	8.7	r-rd	spgs	Mathr	int-r-w	int-r-w	l	Ross	c	metl	Univ	Sterling
000	13*	Zenith	vacm	w-d	H-Shaw	ind-c	Sterlg	amid	3	worm	Timkn	8.7	r-rd	spgs	Mathr	int-r-w	int-r-w	l	Ross	c	metl	Univ	Sterling
950	12	Zenith	vacm	w-d	H-Shaw	ind-c	Sterlg	amid	3	chn	own	11.0	r-rd		Mathr	int-r-w	ext-dst	l	Ross	c	metl	Univ	Sterling
		Zenith	grav	d-d	Mech	selec	Mech	mtr	3	in-g	Clark	5.8	spgs	spgs	Dtrt		ext-	l	CAS	c			Stewart 6
	15	Zenith		d-d	Fuller	selec	Fuller	mtr	3	in-g	Clark	7.0	spgs	spgs	Dtrt	ext-dst	ext-r-w	l	Ross	c			Stewart 9
500	15	Zenith	grav	d-d	Fuller	selec	Fuller	mtr	3	in-g	Clark	9.0	spgs	spgs	Dtrt	in-tr-w	ext-r-w	l	Ross	c			Stewart 7
		Schblr	vacm	cone	own	selec	own	r-ax	3	bevl	own	4.6	r-rd	tor-a	own	int-r-w	ext-r-w	l	Gem*	c	metl	own	Studebaker SF
960	20	Schblr	vacm	cone	own	selec	own	r-ax	3	bevl	own	5.0	r-rd	tor-a	own	int-r-w	ext-r-w	l	Gem	c	metl	own	Studebaker 7
		Holley	grav	cone	Hartfd	selec	Covert	amid	3	worm	Shel*	8.5	spgs	spgs	Merl	int-r-w	int-r-w	l	Ross	c			Sullivan F
		Holley	vacm	d-d	B-Lipe	selec	B-Lipe	mtr	3	worm	Timkn	7.8	spgs	spgs	Shel	int-r-w	int-r-w	l	Ross	c			Sullivan E
300	15	Stmbg	vacm	d-d	Covert	selec	Covert	mtr	3	in-g	Torb	7.0	spgs	spgs		int-r-w	ext-r-w		CAS				Superior A
275	15	Stmbg	vacm	d-d	Fuller	selec	Fuller	mtr	3	in-g	Torb	9.0	r-rd	spgs		int-r-w	ex-rt-w		CAS				Superior C
200	19	Zenith	vacm	d-p	B-Beck	selec	Covert	amid	3	worm	Timkn	7.8	r-rd	spgs	Perf	int-r-w	int-r-w	l	Ross	c	fab*	ther*	Taylor
100	18	Zenith	vacm	d-p	B-Beck	selec	Covert	amid	4	worm	Timkn	7.8	r-rd	spgs	Perf	int-r-w	int-r-w	l	Ross	c	fab*	ther*	Taylor
300	16	Zenith	vacm	d-p	B-Beck	selec	Covert	amid	4	worm	Timkn	8.8	r-rd	spgs	Perf	int-r-w	int-r-w	l	Ross	c	fab*	ther	Taylor
230	15	Zenith	vacm	d-p	B-Beck	selec	Covert	amid	4	worm	Timkn	8.8	r-rd	spgs	Perf	int-r-w	int-r-w	l	Ross	c	fab*	ther*	Taylor
166	14	Zenith	vacm	d-p	B-Beck	selec	Covert	amid	4	worm	Timkn	10.2	r-rd	spgs	Perf	int-r-w	int-r-w	l	Ross	c	fab	ther*	Taylor
	15	Stmbg	grav	d-p	Fuller	selec	Fuller	mtr	3	worm	Timkn		spgs	spgs		int-r-w	int-	l	Ross	c			Thomas 40
	12	Stmbg	grav	d-p	Fuller	selec	Fuller	mtr	3	worm	Timkn		spgs	spgs		int-r-w	int-r-w	l	Ross	c			Thomas 70
		Schblr	grav	cone	Dtrt	selec	Dtrt	mtr	3	in-g	Russl	6.8	spgs	spgs	Kal	int-r-w	ext-r-w	l	Lavn	c			Tiffin A
000	15	Schblr	grav	d-d	Dtrt	selec	Dtrt	mtr	3	worm	Shel	6.5	spgs	spgs	Kal	int-r-w	int-r-w	l	Ditw	c			Tiffin AW
000	12	Schblr	grav	d-d	Warner	selec	Warner	mtr	3	worm	Shel	8.6	spgs	spgs	Kal	int-r-w	ext-	l	Ditw	c			Tiffin GW
000	11	Schblr	grav	cone	Hartfd	selec	Covert	amid	3	chn	Timkn	8.8	r-rd		Kal	int-r-w	ext-dst	l	Ditw	c			Tiffin MC
000	13	Schblr	grav	cone	Hartfd	selec	Covert	amid	3	worm	Timkn	7.7	spgs	spgs	Kal	int-r-w	int-r-w	l	Ditw	c			Tiffin MW
000	9	Schblr	grav	cone	Hartfd	selec	Covert	amid	3	worm		11.7	r-rd	spgs	Kal	int-r-w	int-r-w	l	Ross	c			Tiffin PW
000	10	Schblr	grav	d-p	B-Beck	selec	Covert	amid	3	worm	Shel	11.7	r-rd	spgs	Kal	int-r-w	int-r-w	l	Ross	c			Tiffin RW
000	9	Schblr	grav	d-p	B-Beck	selec	Covert	amid	3	worm	Shel	13.0	r-rd	Spgs	Kal	int-r-w	int-r-w	l	Ross	c			Tiffin SW
000	11		grav	d-p	B-Beck	ind-c	Cotta	amid	3	in-g	Celfr	11.0	r-rd	spgs	Shel	int-	int-	l	Lavn	c			Titan
		Zenith	grav	d-d		selec		mtr	4	worm			spgs	spgs		int-r-w	int-r-w	l		c			Transport Tractor T
200	15	Stmbg	grav	d-d	Fuller	selec	Fuller	mtr	3	in-g	Torb	8.0	spgs	spgs		ext-dst	ext-r-w	l	Gem	c			Triangle A

ABBREVIATIONS—Makers of Parts

'Other Options
A-K—Atwater-Kent
Aut-L—Auto-Lite
B-Beck—Borg & Beck
B-Lipe—Brown-Lipe
Bing—Berling
Brm—Bremer
Bud—Buda
Can—Candler
Celfr—Celfor
Chgo—Chicago
Con—Continental
Conn—Connecticut
Dtrt—Detroit
Dynt—Dyneto
Elsmn—Eisemann
E-M—English & Mersick
Eur—Eureka
Fed—Fedders
Franck—Francke
G&O—G & O Mfg. Co.
GBS—Golden, Belknap & Swartz
G-C—Garden City
Gem—Gemmer
Har—Harrison
Hart—Hartford
Hays—Hayes
Hig—Higgins
H-Shaw—Hele-Shaw
H-S—Herschell-Spillman
Idl—Ideal
Iron—Iron City
Jacx—Jackson-Church-Wilcox
Jhnson—Johnson
Kal—Kalamazoo
K-B—Kinsler-Bennett
Key-H—Keystone-Hindley
Lavn—Lavigne
LeR—LeRoi
Lgt—Light
Ligt—Liggett
Lyc—Lycoming
M'C—McCord
Merl—Merrill
Mil—Milwaukee
Mnrch—Monarch
Mthr—Mather
Natl—National
N. A.—North American
P & B—Parish & Bingham
Perf—Perfection
Prsh—Parish
R-T—Rome-Turney
Rayfld—Rayfield
Rowl—Wm. Harvey Rowland
Russl—Russel
Rut—Rutenber
Savg—Savage Arms
Salsby—Salisbury
Schblr—Schebler
Shel—Sheldon
Shkspr—Shakespeare
Smth—A. O. Smith
S-P—Spring-Perch
Spltf—Splitdorf
Stewrt—Stewart
Stmbg—Stromberg
Sundmn—Sunderman
S-W—Sparks-Withington
Ther—Thermoid
Timkn—Timken
Torb—Torbenson
Tut—Tutbill
Univ—Universal Machine Co.
Wau—Waukesha
Wilcx—Wilcox
Wis—Wisconsin

Prices are exclusive of the 3 per cent Government war tax

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Technical Specifications of Gasoline

Name and Model	Tons Capacity	Chassis Price	Wheelbase, Inches	FRAME: Make	FRAME: Material	FRAME: Type	TIRES: Kind	TIRES: Sizes in Ins. Front	TIRES: Sizes in Ins. Rear	Wheels	ENGINE: Make	ENGINE: No. Cyl. Bore and Stroke—N.A.C.C., Hp.	ENGINE: Cylinders Cast	COOLING: Water Circ.	COOLING: Radiator Make	COOLING: Radiator Core and Case	IGNITION: Type	IGNITION: Make	IGNITION: Spark Advance	ELEC. SYSTEM: Type	ELEC. SYSTEM: Make	ELEC. SYSTEM: Extra Cost	GOVERNOR: Type	GOVERNOR: Make	GOVERNOR: Drive
Union.....B	2½	1,990	152	.....	p-stl.	.....	s....	39x4	39x6	wd..	Wis..	4-4 x6 -25.6	4	ther....	R-T..	fin-cst...	sing..	Eismn	hand.	ltg....	opt...	75	cent..	Simplex.	d-sht
U. S.....E	2	2,650	144	own...	rol-c.	flex..	s....	34x4	36x4d	wd..	Con..	4-4½x5½-27.2	4	cent...	Bush.	fin-sht...	dual..	Bosch.	hand.	ltg....	Bosch.	100	cent..	Pierce*..	moto
U. S.....H	2	2,950	144	own...	rol-c.	flxe..	s....	34x4	36x4d	wd..	Con..	4-4½x5½-27.2	4	cent...	Bush.	fin-sht...	dual..	Bosch.	hand.	ltg....	Bosch.	100	cent..	Pierce*..	moto
U. S.....D	3½	3,350	162	own...	rol-c.	flex..	s....	36x5	36x5d	wd..	Con..	4-4½x5½-32.4	2	cent...	Fed..	zz-t-sht..	dual..	Bosch.	hand.	ltg....	Bosch.	100	cent..	Pierce*..	moto
U. S.....J	3½	3.650	162	own...	rol-c.	flex..	s....	36x5	40x5d	wd..	Con..	4-4½x5½-32.4	2	cent...	Fed..	zz-t-sht..	dual..	Bosch.	hand.	ltg....	Bosch.	100	cent..	Pierce*..	moto
U. S.....K	5	4,550	168	own...	rol-c.	flex..	s....	36x5	40x6d	c-s..	Wau..	4-4½x6½-36.1	2	cent...	Bush.	fin-sht...	dual..	Bosch.	hand.	ltg....	Bosch.	100	cent..	Wau.....	moto
United F. W. D.....B	3	4,000	130	.....	rol-c.	s-flx..	s....	36x7	36x7	wd..	Bvr..	4-4½x6 -34.3	4	cent...	Chgo	fin-cst ..	dual..	Eismn	hand.	ltg 2..	Bijur..	....	cent..	Duplex..	moto
United.....BSW	2	2,350	144*	.....	.....	.....	s....	36x4	36x4d	....	Con..	4-4½x5½-27.2	4	cent...	.....	.....	.....	Eismn	hand.	s&l...	opt.....	.....	suct..	Mnrch..	moto
United.....CSW	3½	3,150	144*	.....	.....	.....	s....	36x5	36x5d	....	Con..	4-4½x5½-32.4	2	cent...	.....	.....	.....	Eismn	hand.	s&l...	opt.....	.....	suct..	Mnrch..	moto
United.....DSW	4	3,450	144*	.....	.....	.....	s....	36x5	36x6d	....	Con..	4-4½x5½-32.4	2	cent...	.....	.....	.....	Eismn	hand.	s&l...	opt.....	.....	suct..	Mnrch..	moto
United.....ESW	5	4,250	144*	.....	.....	.....	s....	36x6	40x6d	....	Wis..	4-4½x5½-41.6	2	cent...	.....	.....	.....	Eismn	hand.	s&l*..	opt.....	....	cent..	Pierce...	dsht
United Tractor.....	6	2,490	110	.....	.....	.....	s....	34x3½	34x7	....	Bud..	4-4½x5½-32.4	4	cent...	.....	.....	.....	Bosch.	.....	.....	.....	.....	.....	.....	.....
Universal.....G	1½	.....	133	.....	p-stl.	rigid.	.....	34x3½	34x5	wd..	Bud..	4-3½x5½-22.5	4	pist....	Long.	fin-cst...	sing..	Eismn	hand.	ltg....	.....	....	suct..	Mnrch..	moto
Universal.....D	2	.....	132	.....	p-stl.	.....	s....	36x5	36x4d	wd..	own..	4-4½x5½-28.9	4	cent...	Long.	fin-cst...	sing..	Eismn	hand.	ltg....	.....	stk..	suct*.	Mnrch*..	moto
Universal.....L	3½	.....	156	.....	rol-c.	.....	s....	36x5	36x5d	wd..	Bud..	4-4½x5½-28.9	4	cent...	Long.	fin-cst...	sing..	Eismn	hand.	ltg....	.....	stk..	suct*.	Mnrch*..	moto
Velie.....25A	2	2,750	150*	Smth..	p-stl.	.....	s....	36x4	36x7	wd..	Con..	4-4½x5½-27.2	4	cent...	own..	fin-cst...	sing..	Bosch.	hand.	stg....	Remy.	....	cent..	Pierce...	moto
Velie.....26A	3½	3,600	172*	Smth..	p-stl.	.....	s....	36x5	40x5d	wd..	Con..	4-4½x5½-32.4	2	cent...	own..	fin-cst...	sing..	Bosch.	hand.	.....	.....	....	cent..	Pierce...	moto
Vim.....21	½	765	108	Prsh.	rol-c.	s-flx..	pnu..	31x4	31x4	wd..	own..	4-3 x4½-14.4	4	ther....	M'C.	fin-sht...	sing.	Dixie..	hand.	ltg....	Splif..	....	none	none....	.....
Walter.....F	5	5,000	156	.....	p-stl.	.....	s....	40x6	40x6d	c-s..	own..	4-4¾x6½-36.1	4	cent...	own..	fin-cst...	sing..	Eismn	fix...	sl&i...	West..	stk..	l-b...	own.....	moto
Watson.....Tractor	5	4,050	80	own...	rol-c.	.....	s....	34x4s	36x5d	wd..	Con..	4-4½x5½-32.4	2	cent...	Fed..	cel-sht..	dual..	Bosch.	hand.	none..	none..	.....	cent..	Pierce...	moto
Ware.....	3½	4,000	140	.....	p-stl.	s-flx..	s....	36x6	36x6	wd.	....	4-5½x6 -42.2	2	cent...	.....	.....	dual..	Bosch.	hand.	ltg*...	Bosch.	.....	cent..	Pierce...	moto
Western.....	7	4,600	146	own...	rol-c.	s-flx..	s....	36x7	40x7d	c-s..	Wis..	4-4¾x5½-36.1	2	cent...	own..	s-t-cst...	sing..	Bosch.	hand.	ltg....	Vesta.	75	cent..	Simplex.	gset
White.....GBBE	¾	2,300	133	.....	p-stl.	.....	pnu..	34x4½	34x4½	wd..	own..	4-3½x5½-22.5	4	cent...	.....	cel-sht...	sing..	Eismn	hand.	s&l ..	opt.....	.....	.....	none....	.....
White.....TBC	1½	3,300	145	.....	p-stl.	.....	p&s.	36x3½	36x3½d	wd..	own..	4-3½x5½-22.5	4	cent...	.....	cel-sht...	sing..	Eismn	hand.	s&l ..	opt.....	.....	.....	none....	.....
White.....TAD	3	4,100	163	.....	rol-I.	rigid.	s....	36x5	40x5d	c-s..	own..	4-3½x5½-22.5	4	cent...	.....	cel-sht...	sing..	Eismn	hand.	.....	.....	.....	.....	none....	.....
White.....TCD	5	5,000	169	.....	rol-I.	rigid.	s....	36x5	40x6d	c-s..	own..	4-4½x6⅜-29 0	4	cent...	.....	cel-sht...	sing..	Eismn	hand.	.....	.....	.....	.....	none....	.....
White-Hickory.....H	1½	.....	144	.....	p-stl.	rigid*	s....	36x3½	36x4	wd..	Con..	4-3½x5 -22.5	4	cent...	.....	cel-ps...	sing..	Eismn	fix ...	.....	.....	.....	cent..	Pierce...	moto
Wichita.....A	1	.....	110	.....	p-stl.	s-flx..	s....	34x3	34x4	wd..	own..	4-3½x5 -19.6	4	ther...	E-M..	sq-t-s...	sing..	Eismn	hand.	.....	.....	.....	.....	none....	.....
Wichita.....K	1	.....	118	.....	p-stl.	s-flx..	s....	36x3	36x4	wd..	own..	4-3½x5 -19.6	4	ther...	Perf..	zz-t-c...	sing..	Eismn	hand.	.....	.....	.....	.....	none....	.....
Wichita.....L	1½	.....	118	.....	p-stl.	s-flx..	s....	36x3	36x5	wd..	own..	4-3½x5 -19.6	4	ther...	Perf.	zz-t-c...	sing..	Eismn	hand.	.....	.....	.....	.....	none....	.....
Wichita.....B	2	.....	118	.....	p-stl.	s-flx..	s....	34x3½	34x3d	wd.	own..	4-3½x5 -19 6	4	ther....	E-M..	sq-t-s...	sing..	Eismn	hand.	.....	.....	.....	.....	none....	.....
Wichita.....R	2½	.....	144	.....	p-stl.	s-flx..	s....	36x4	36x7*	wd.	Wau	4-3½x5½-22.5	4	cent...	Perf..	zz-t-c...	sing..	Eismn	hand.	.....	.....	.....	l-b...	Wau.....	moto
Wichita.....O	3½	.....	165	.....	p-stl.	s-flx..	s....	36x5	36x5d	wd..	Wau	4-4½x5½-32.4	2	cent...	E-M..	sq-t-s...	sing..	Eismn	hand.	.....	.....	.....	cent..	Wau.....	moto
Wichita.....Q	5	.....	165	.....	p-stl.	s-flx..	s....	36x6	38x6d	wd..	Wau	4-4½x5½-32 4	2	cent...	E-M..	sq-t-s...	sing..	Eismn	hand.	.....	.....	.....	cent..	Wau.....	moto
Wilcox.....S	1	.....	128	Smth..	p-stl.	s-flx..	opt..	35x5*	35x5*	wd..	Con.	4-3½x5 -22.5	4	ther...	Perf..	zz-t-ps..	sing..	Bosch	hand.	ltg 2..	West..	....	cent..	Pierce...	moto
Wilcox.....X	1½	.....	144	Smth..	p-stl.	s-flx	s....	36x4	36x5	wd.	own..	4-4½x5 -28.9	2	cent...	Perf..	zz-t-ps..	sing..	Bosch	hand.	ltg 2..	West..	....	cent..	Pierce...	moto
Wilcox.....Q	2	.....	150	Smth..	p-stl.	s-flx..	s....	36x4	36x3½d	wd.	own..	4-4½x5 -32.4	2	cent...	Perf..	zz-t-c...	sing..	Bosch	hand.	ltg 2..	West..	....	cent..	Pierce...	moto
Wilcox.....P	3½	.....	154	Smth..	p-stl.	s-flx..	s....	36x5	36x5d	wd.	own..	4-4½x5 -28.9	2	cent...	Perf..	zz-t-c...	sing..	Bosch	hand.	ltg 2.	West..	....	cent..	Pierce...	moto
Wilcox.....W	5	.....	162	Smth..	p-stl.	s-flx..	s....	36x5	40x6d	c-s.	Wau	4-4½x6½-36 1	2	cent...	Perf..	fin-cst...	sing..	Bosch	hand.	.....	none	....	cent..	Wau.....	moto
Wilson.....	2	2,550	144	.....	rol-c.	flex	s....	36x4	36x4d	wd.	Con.	4-4½x5½-27.2	4	cent...	Long.	fin-cst...	sing.	Eismn	fix..	opt...	opt.....	....	cent..	Pierce...	moto
Wilson.....	3½	3,250	156	.....	rol-c.	flex	s....	36x5	36x5d	wd.	Con.	4-4½x5½-32.4	2	cent...	Long.	fin-cst...	sing.	Eismn	fix..	opt...	opt.....	....	cent..	Pierce...	moto
Wilson.....	5	.....	156	.....	rol-c.	s-flx..	s....	36x6	40x6d	wd.	.....	4-4½x5½-32 4	2	cent...	.....	fin-cst...	sing.	Eismn	fix..	opt...	opt.....	....	cent..	Pierce...	moto
Winther.....47	2	2,800	150	.....	rol-c	s-flx	s....	36x4	36x7	wd*	Wis.	4-4 x6 -25.6	4	cent...	Bre..	tub-cst..	sing..	Eismn	hand.	opt ..	Bijur..	....	cent..	Duplex..	moto
Winther.....67	3	3,600	150	.....	rol-c.	s-flx.	s....	36x4	36x5d*	wd*	Wis.	4-4 x6 -25.6	4	cent...	Bre..	tub-cst..	sing..	Eismn	hand.	opt ..	Bijur..	....	cent..	Duplex..	moto
Winther.....87	4	4,000	156	.....	rol-c.	s-flx.	s....	36x5	40x5d*	c-s.	Wis.	4-4½x6 -28.9	4	cent...	Bre	tub-cst..	sing..	Eismn	hand.	opt ..	Bijur..	....	cent..	Duplex..	moto
Winther.....107	5	4.600	162	.....	rol-c.	s-flx.	s	36x5	40x6d*	c-s.	Wis.	4-4½x5½-36.1	2	cent...	Bre..	tub-cst..	sing..	Eismn	hand.	s&l ..	Bijur..	....	cent..	Duplex..	moto
Winther.....127	6	5,000	162	.....	rol c	s-flx..	s. ..	36x6	40x6d*	c-s.	Wis.	4-5½x5½-42.0	2	cent...	Bre..	tub-cst..	sing..	Eismn	hand.	s&l ..	Bijur..	....	cent..	Duplex..	moto
Wisconsin.....B	1½	1.650	136	Smth..	p-stl	rigid	s....	34x4	34x6	wd.	Wau	4-3½x4 -19.6	4	cent...	Chro	cel-sht...	sing.	Eismn	hand.	.....	.....	....	cent..	Wau.....	moto
Wisconsin.....C	2½	2.500	156	Smth..	p-stl	rigid	s....	36x4	36x6	wd.	Wau	4-4 x5½-25 6	2	cent...	Chro	cel-sht...	sing.	Eismn	hand.	.....	.....	....	cent..	Wau.....	moto
Witt-Will.....WD-16	1	2.000	120	.....	p-stl.	flex	s*	36x3*	36x4*	wd.	Con..	4-3½x5½-22 5	4	cent...	Natl.	s-t-sht...	sing.	Eismn	auto.	.....	none..	....	cent..	Pierce...	moto
Witt-Will.....WD-18	2½	2.500	144	.....	p-stl	s-flx	s*...	36x3½*	36x3½d*	wd.	Con..	4-4½x5½-27.2	4	cent...	Natl.	cel-sht..	sing.	Eismn	auto	.....	none..	....	cent..	Pierce...	moto

Steam Vehicles

Name and Model	Capacity in Pounds	Price of Chassis	Wheelbase in Inches	FRAME: Material	FRAME: Construction	TIRES: Kind	TIRES: Sizes in Inches Front	TIRES: Sizes in Inches Rear	Wheels	BOILER: Location	BOILER: Type	BOILER: Heating Surface in Sq. In.	BOILER: Horsepower	BOILER: BURNER Type	BOILER: BURNER Regulation	BOILER: PRESSURE Normal in Lbs.	BOILER: PRESSURE Maximum in Lbs.	WATER: Water Capacity in Gal.	CONDENSER: Type	CONDENSER: Circulation
Steameter....	4,000	$3,000	144	p-stl....	.....	s.....	36x4	36x6	wood...	under hood	Doble...	21,600	45	arb....	auto....	600	.....	25	fin-sht...	.....

ABBREVIATIONS—Types of Construction

*Other Options
amid—amidships
auto—automatic
c—center
c&l—center and left
c-s—cast steel
cent—centrifugal
cel-cst—cellular cor cast case
cel-sht—cellular core sheet case
cylinders cast, 2 in pairs
cylinders cast, 4 in block
cylinders cast, 3 in threes
cylinders cast, 1 singly
d—dual
d-d—dry disk
d-p—dry plate
d-rd—double reduction
elec—electric
ext-dst—external drive-shaft
ext-f-s—external front wheels.
ext-jst—external jack-shaft
ext-r-w—external rear wheel
fab—fabric
fin-sht—finned tube core sheet case
fix—fixed
flex—flexible
fric—friction
grav—gravity
gset—gearset
hyd—hydraulic
ind-c—individual clutch
int-dst—internal drive-shaft
int-f-w—internal front wheels
in-g—internal gear
in-g-4—internal gear drive on 4 wheels
int-r-w—internal rear wheel
jst—unit with jackshaft
l—left
ltg—lighting
metl—metal
mtr—unit with motor
opt—optional
pist—piston pump
plan—planetary
pnu—pneumatic
pres—pressure
prog—progressive sliding gear
p-stl—pressed steel
r—right
r-a—unit with rear axle
ring-cst—ring core cast case
rol-c—rolled channel
rol-i—rolled I-beam
r-rd—radius rods
selec—selective sliding gear
s-flx—semi-flexible
s & l—starting and lighting
s, l & i—starting, lighting and ignition
s, l & i 2—starting, lighting and ignition two-unit
sing—single
s—solid
spgs—springs
sq-t-sht—square tube core sheet case
stk—stock
sub-f—sub-frame
ther—thermo-syphon
tor-a—torque arm
tor-t—torsion tube
vacm—vacuum
wd—wood
w-d—multiple disk in oil
worm—top worm
w-p—wet plate
zz-t-sht—zig-zag tube core sheet case

Prices are exclusive of the 3 per cent. Government war tax

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Commercial Vehicles for 1918—Concluded

ENGINE				TRANSMISSION										BRAKES		CONTROL			UNIVERSALS		Name and Model
SPEED		FUEL SYS.		CLUTCH		GEARSET				FINAL DRIVE						STEERING GEAR					
R.p.m.	Truck in M.p.h.	Carbureter Make	Fuel Feed	Type	Make	Type	Make	Placed	Speeds	Type	Axle Make	Total Gear Reduction in High	Propulsion Taken By	Torque Taken By	Make of Springs	Foot	Hand	Placed	Make	Levers	Type	Make	
,200	15	Schblr..	grav..	d-d...	Fuller..	selec...	Fuller..	mtr...	3	in-g...	Russl..	7.8	spgs...	spgs...	Mathr..	int-r-w.	ext-r-w.	r....	Ross..	c....	.....	.....	Union.....B
,160	15	Stmbg..	grav..	cone..	Hartfd.	ind-c...	Cotta..	amid..	3	worm	own....	8.2	r-rd....	.....	Tut....	int-r-w.	ext-jst.	l....	Lavn..	c....	metl...	Hart*..	U. S.....E
,200	15	Stmbg..	grav..	cone..	Hartfd.	ind-c...	Cotta..	amid..	3	worm	Shel...	8.7	spgs...	spgs...	Shel...	int-r-w.	int-r-w.	l....	Lavn..	c....	metl...	Hart*..	U. S.....H
,090	13	Stmbg..	grav..	cone..	Hartfd.	ind-c...	Cotta..	amid..	3	worm	own....	8.0	r-rd....	.....	Tut....	int-r-w.	ext-j-s.	l....	Lavn..	c....	metl...	Hart*..	U. S.....D
,090	12	Stmbg..	grav..	cone..	Hartfd.	ind-c...	Cotta..	amid..	3	chn...	Shel...	11.7	r-rd....	.....	Shel...	int-r-w.	int-r-w.	l....	Lavn..	c....	metl...	Hart*..	U. S.....J
,950	12	Stmbg..	grav..	d-p...	B-Beck.	ind-c...	Cotta..	amid..	3	worm	Shel...	8.8	r-rd....	spgs...	Shel...	int-r-w.	int-r-w.	l....	Lavn..	c....	metl...	Hart*..	U. S.....K
,125	14	Stmbg..	grav..	d-d...	B-Lipe.	selec...	B-Lipe.	mtr...	3	worm	Shel...	8.6	.....	spgs...	spgs...	int-r-w.	int-r-w.	.....	Gem..	.....	.....	.....	United.....BSW
980	12	Stmbg..	grav..	d-d...	B-Lipe.	selec...	B-Lipe.	mtr...	3	worm	Shel...	8.7	.....	spgs...	spgs...	int-r-w.	int-r-w.	.....	Gem..	.....	.....	.....	United.....CSW
980	12	Stmbg..	grav..	d-d...	B-Lipe.	selec...	B-Lipe.	mtr...	3	worm	Shel...	8.7	.....	spgs...	spgs...	int-r-w.	int-r-w.	.....	Gem..	.....	.....	.....	United.....DSW
897	10	Zenith..	grav..	d-d...	B-Lipe.	selec...	B-Lipe.	amid..	4	worm	Shel...	11.7	.....	spgs...	spgs...	int-r-w.	int-r-w.	.....	Ross..	.....	.....	.....	United.....ESW
....	.....	Zenith..	grav..	.....	Muncie	selec...	Muncie	mtr...	4	in-g...	.....	9.0	.....	r-rd....	.....	int-r-w.	int-r-w.	.....	Ross..	.....	.....	.....	.....
,110	12	Rayfld.	grav..	w-d...	M-Evn.	ind-c...	Cotta.	amid..	3	bevl-4.	own....	9.0	spgs...	spgs...	Std....	int-r-w.	ext-dst.	r....	Lavn..	r....	.....	.....	United F. W. D.....B
....	.....	Zenith..	grav..	d-p...	own....	selec...	own....	mtr...	3	worm	own....	.....	r-rd....	tor-a...	Kal....	int-r-w.	int-r-w.	l....	Lavn..	c....	.....	.....	Universal.....G
,100	12	Zenith..	grav..	d-d...	own....	selec...	own....	amid..	3	chn...	own....	.....	r-rd....	.....	Kal....	int-....	int-....	r....	Lavn..	r....	.....	.....	Universal.....D
,100	12	Zenith..	grav..	d-d...	own....	selec...	own....	amid..	3	chn...	own....	.....	r-rd....	.....	Kal....	int-r-w.	int-dst.	r....	Lavn..	r....	.....	.....	Universal.....L
,008	18	Stmbg..	vacm..	d-p...	own....	selec...	B-Lipe.	amid..	4	worm	Timkn.	6.0	spgs...	spgs...	Mthr...	int-r-w.	int-r-w.	r....	Gem..	c....	metl...	Spicer..	Velie.....25A
,215	14	Stmbg..	vacm..	d-d...	own....	selec...	B-Lipe.	amid..	4	worm	Timkn	10.3	r-rd....	spgs...	Mthr...	int-r-w.	int-r-w.	r....	Gem..	c....	metl...	Spicer.	Velie.....26A
....	.....	Zenith..	grav..	one...	own....	selec...	own....	mtr...	3	bevel..	W-W....	.....	spgs...	spgs...	Shel...	int-r-w.	ext-r-w.	l....	Jacx..	c....	metl...	Spicer..	Vim.....21
,000	50	H-N....	grav..	d-p...	own....	selec...	own....	amid..	4	in-g-4.	own....	8.0	spgs...	spgs...	Merl...	ext-dst	int-r-w.	l....	own....	c....	.....	.....	Walter.....F
,000	11	Zenith..	grav..	d-d...	B-Lipe.	selec...	B-Lipe.	mtr...	4	worm	Timkn.	10.3	r-rd....	spgs...	Shel...	int-r-w.	int-r-w.	r....	Gem..	c....	metl...	Spicer..	Watson.....Tractor
,000	12	Stmbg..	grav..	d-d...	.....	selec...	.....	amid..	3	bevel..	.....	9 8	spgs...	spgs...	.....	ext-...	ext-...	l....	.....	c....	.....	.....	Ware.....
,100	12	Stmbg..	vacm..	d-d...	Warner	selec...	Warner	amid..	4	chn...	Timk*..	13.6	r-rd....	.....	G-C....	int-r-w.	ext-dst.	l....	Ross..	c....	metl...	K-B....	Western.....
....	.....	own....	grav..	w-p...	own....	selec...	own....	amid..	4	bevel..	qwn....	.....	r-rd....	spgs...	.....	int-r-w.	ext-r-w.	l....	own....	c&l..	.....	.....	White.....GBBE
....	.....	own....	grav..	w-p...	own....	selec...	own....	amid..	4	d-rd..	own....	.....	r-rd....	spgs...	.....	int-r-w.	ext-r-w.	l....	own....	c&l..	.....	.....	White.....TBC
....	.....	own....	grav..	w-p...	own....	selec...	own....	amid..	4	chn...	own....	.....	r-rd....	.....	.....	int-r-w.	ext-jst.	l....	own....	c&l..	.....	.....	White.....TAD
....	.....	own....	grav..	w-p...	own....	selec...	own....	amid..	4	chn...	own....	.....	r-rd....	.....	.....	int-r-w.	ext-jst.	l....	own....	c&l..	.....	.....	White.....TCD
,100	15	Stmbg..	vacm..	d-d...	Fuller..	prog...	Fuller..	mtr...	3	worm	Timkn.	.....	spgs...	spgs...	Shel...	int-r-w.	int-r-w.	r....	Ross..	c....	.....	.....	White-Hickory.....H
,085	15	Stmbg*	grav..	cone..	own....	selec...	Covert.	jst....	3	chn...	Shel...	7.3	r-rd....	.....	Shel*..	int-r-w.	int-jst.	r....	Ross..	c....	.....	.....	Wichita.....A
,090	15	.....	grav..	cone..	own....	selec...	Covert.	amid..	3	worm	Shel...	7.8	spgs...	spgs...	Shel*..	int-r-w.	int-r-w.	r....	Ross..	c....	.....	.....	Wichita.....K
....	.....	Stmbg*	grav..	cone..	own....	selec...	Covert.	amid..	3	worm	Shel...	10.7	spgs...	spgs...	Shel*..	int-r-w.	int-r-w.	r....	Ross..	c....	.....	.....	Wichita.....L
,060	13	Stmbg*	grav	cone..	own....	selec...	Covert.	jst....	3	chn...	Shel...	8.2	r-rd....	.....	Shel*..	int-r-w.	int-jst.	r....	Ross	c....	.....	.....	Wichita.....B
,300	13	Stmbg*	grav.	cone..	own....	selec...	Covert.	amid..	3	worm	Shel...	10.3	spgs...	spgs...	Shel*..	int-r-w.	int-r-w.	rr....	Ross..	c....	.....	.....	Wichita.....R
,200	11	Stmbg*	grav.	cone..	Hart....	selec...	B-Lipe.	amid..	4	worm	Shel...	11.7	spgs...	spgs...	Shel*..	int-r-w.	int-r-w.	r....	Ross..	c....	.....	.....	Wichita.....O
,200	10	Stmbg*	grav.	cone..	Hart....	selec...	B-Lipe.	amid..	4	worm	Shel...	13.0	spgs...	spgs...	Shel*..	int-r-w.	int-r-w.	r....	Ross	c....	.....	.....	Wichita.....Q
,200	18	Stmbg..	grav..	d-d...	B-Lipe*	selec...	B-Lipe*	mtr...	3	worm	Shel...	6.5	spgs...	spgs...	Shel...	int-r-w.	int-r-w.	l....	Gem..	c....	metl...	Spicer..	Wilcox.....S
,100	16	Stmbg..	grav..	cone..	own....	selec...	own....	amid..	3	worm	Shel...	7.7	spgs...	spgs...	Shel...	int-r-w.	int-r-w.	l....	Gem..	c....	metl...	Wilcx*.	Wilcox.....X
,100	14	Stmbg..	grav..	cone..	own....	selec...	own....	amid..	3	worm	Shel...	8.6	spgs...	spgs...	Shel...	int-r-w.	int-r-w.	l....	Gem..	c....	metl...	Wilcx*.	Wilcox.....Q
,100	10	.....	grav..	cone..	own....	selec...	own....	amid..	3	worm	Shel...	11.7	spgs...	spgs...	Shel...	int-r-w.	int-r-w.	l....	Gem..	c....	metl...	Wilcx*.	Wilcox.....P
,000	14	Stmbg..	vacm..	cone..	own....	selec...	own....	amid..	4	worm	Shel...	8.7	spgs...	spgs...	Shel...	int-r-w.	int-r-w.	l....	Gem..	c....	metl...	Spicer*	Wilcox.....W
,140	14	Marvel.	grav.	cone..	Hart....	selec...	Covert	amid.	3	worm	Shel...	8.6	spgs...	spgs...	Shel...	int-r-w.	int-r-w.	l....	Ross..	c....	.....	.....	Wilson.....
,100	12	Marvel.	grav..	d-d...	B-Beck.	selec...	Covert.	amid..	4	worm	Shel...	8.7	spgs...	spgs...	Shel...	int-r-w.	int-r-w.	l....	Ross..	c....	.....	.....	Wilson.....
,100	10	Marvel.	grav.	cone..	.....	selec...	.....	amid..	4	worm	.....	13.0	spgs...	spgs...	.....	int-r-w.	int-r-w.	l....	.....	c....	.....	.....	Wilson.....
,100	15	Master.	vacm..	d-p...	B-Beck.	prog...	own....	amid..	4	in-g...	Celf....	.....	spgs...	spgs...	Mthr...	int-r-w.	ext.....	r....	Ross..	c....	metl...	Blood*	Winther.....47
,300	14	Master.	vacm..	d-p...	B-Beck.	prog...	own....	amid..	4	in-g...	Celf....	10.0	spgs...	spgs...	Mthr...	int-r-w.	ext.....	r....	Ross..	c....	metl...	Blood*	Winther.....67
,300	12	Master.	vacm..	d-p...	B-Beck	prog...	own....	amid..	4	in-g...	Celf....	12.5	spgs...	spgs...	Mthr...	int-r-w.	int.....	r....	Ross..	c....	metl...	Blood*	Winther..... 87
,100	10	Master.	vacm..	d-p...	B-Beck.	prog...	own....	amid..	4	in-g...	Celf....	12.5	spgs...	spgs...	Mthr...	int-r-w.	int.....	r....	Ross..	c....	metl...	Blood*	Winther.....107
,100	10	Master.	vacm..	d-p...	B-Beck.	prog...	own....	amid..	4	in-g...	Celf....	.....	spgs...	spgs...	Mthr...	int-r-w.	int-r-w.	r....	Ross..	c....	metl...	Blood*	Winther.....127
....	16	Master.	grav..	d-d...	Fuller..	selec...	Fuller..	mtr...	3	worm	Shel...	.....	spgs...	spgs...	Shel...	int-r-w.	int-r-w.	l....	Lavn..	c....	metl...	Blood..	Wisconsin.....B
....	15	Master.	grav..	d-d...	Fuller..	selec...	Fuller..	mtr...	3	worm	Shel...	.....	spgs...	spgs...	Shel...	int-r-w.	int-r-w.	l....	Lavn..	c....	metl...	Blood..	Wisconsin.....C
.....	.....	Zenith..	grav..	d-d...	B-Lipe.	selec...	B-Lipe.	mtr...	3	worm	Timkn.	3.0	spgs...	spgs...	.....	int-r-w.	int-r-w.	l....	Ross..	c....	metl...	Spicer..	Witt-Will.....D16
,000	14	Zenith..	grav..	d-d...	B-Lipe.	selec...	B-Lipe.	mtr...	3	worm	Timkn.	7.7	spgs...	spgs...	Shel...	int-r-w.	int.....	l....	Ross..	c....	metl...	Spicer..	Witt-Will.....WD18

Steam Vehicles

SYSTEM		ENGINE						TRANSMISSION					CONTROL					Name and Model
Feed Pump Type	Feed Control	Location	No. of Cylinders	Cylinders Cast	Valve Location	Valve Action	Valve Stroke	Reverses By	Final Drive	Gear-Ratio	Axle Type	Propulsion Taken By	Torque Taken By	Throttle	Hook-up	Reverse	Steering Wheel Location	Brake Lever Location	
.....	.....	u-seat..	2	singly...	front....	Stephenson.	adj....	links.....	worm*.	7.75	full-fl...	springs....	springs..	lever....	pedal...	pedal...	left.....	left.....	Steametor...

ABBREVIATIONS—Makers of Parts

Other Options
K—Atwater-Kent
t-L—Auto-Lite
Beck—Borg & Beck
Lipe—Brown-Lipe
ng—Berling
m—Bremer
d—Buda
n—Candler
lfr—Celfor
go—Chicago
n—Continental
nn—Connecticut
rt—Detroit
Dynt—Dyneto
Eismn—Eisemann
E-M—English & Mersick
Eur—Eureka
Fed—Fedders
Franck—Francke
G&O—G & O Mfg. Co.
GBS—Golden, Belknap & Swartz
G-C—Garden City
Gem—Gemmer
Har—Harrison
Hart—Hartford
Hays—Hayes
Hig—Higgins
H-Shaw—Hele-Shaw
H-S—Herschell-Spillman
Idl—Ideal
Iron—Iron City
Jacx—Jackson-Church-Wilcox
Jhnsn—Johnson
Kal—Kalamazoo
K-B—Kinsler-Bennett
Key-H—Keystone-Hindley
Lavn—Lavigne
LeR—LeRoi
Lgt—Light
Ligt—Liggett
Lyc—Lycoming
M'C—McCord
Merl—Merrill
Mil—Milwaukee
Mnrch—Monarch
Mthr—Mather
Natl—National
N. A.—North American
P & B—Parish & Bingham
Perf—Perfection
Prsh—Parish
R-T—Rome-Turney
Rayfld—Rayfield
Rowl—Wm. Harvey Rowland
Russl—Russel
Rut—Rutenber
Salsby—Salisbury
Savg—Savage Arms
Schblr—Schebler
Shel—Sheldon
Shkspr—Shakespeare
Smth—A. O. Smith
S-P—Spring-Perch
Spltf—Splitdorf
Stewrt—Stewart
Stmbg—Stromberg
Sundmn—Sunderman
S-W—Sparks-Withington
Ther—Thermoid
Timkn—Timken
Torb—Torbenson
Tut—Tuthill
Univ—Universal Machine Co.
Wauk—Waukesha
Wilcx—Wilcox
Wis—Wisconsin

Prices are exclusive of the 3 per cent. Government war tax

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Technical Specifications of 31 Electric the American Market

Ten Electric Industrial Trucks

Name and Model	Load Capacity in Pounds	PRICE OF CHASSIS: With Battery	PRICE OF CHASSIS: Without Battery	Wheelbase in Inches	TIRES: Kind	TIRES: SIZES IN INCHES: Front	TIRES: SIZES IN INCHES: Rear	BATTERY: Location	BATTERY: Make and Type	BATTERY: No. Plates	BATTERY: No. Cells	BATTERY: No. Trays	BATTERY: Amp.-Hr. Capacity	BATTERY: MILES PER CHARGE: Light	BATTERY: MILES PER CHARGE: Loaded	MOTOR: Location and Number	MOTOR: Make
C.T	1,000	.....	1,600	90	solid	36x3	36x3	amid-u	Edison-A5*	.....	60*	6*	187½*	.....	50*	unit-x-2	G.E.
C.T	2,000	.....	1,950	.....	solid	36x3½	36x4	amid-u	Edison-A6*	.....	60*	6*	225*	.....	45*	unit-x-2	G.E.
C.T	4,000	.....	2,350	116	solid	36x	36x d	amid-u	Edison-A8*	.....	60*	8*	300*	.....	50*	unit-x-2	G.E.
C.T	7,000	.....	3,350	123	solid	36x3½d*	36x4d	amid-u	Edison-A10*	.....	60*	8*	375*	.....	40*	unit-w-4	G.E.
C.T	10,000	.....	3,800	132	solid	36x4d*	36x5d	amid-u	Edison-A12*	.....	60*	8*	450*	.....	40*	unit-w-4	G.E.
Couple Gear....A	10,000	5,500	4,800	96	solid	36x5d	36x5d	amid-u	Philadelphia	29	44	8	350	35	30	in wheel-4	own
Couple Gear....ALDF	14,000	5,000	4,300	96	s&stl	36x5d	64x5	amid-u	Philadelphia	29	44	8	350	35	30	in wheel-2	own
Couple Gear....ACDF	14,000	6,000	5,200	94	s&stl	36x5d	64x6	amid-u*	Philadelphia	29	44	8	350	35	30	in wheel-2	own
G.V	1,000	.....	.....	89¼	solid	36x3½	36x2½	amid-u	Edison-A4*	9*	60*	6*	150*	.....	45	in rear-1	G.E.
G.V	2,000	.....	.....	104	solid	36x3½	36x3½	amid-u	Edison-A6*	.....	60*	6*	.....	.....	50*	in-rear 1	G.E.
G.V	4,000	.....	.....	112½	solid	36x4	36x3d	amid-u	Edison-A8*	.....	60*	12*	300*	.....	45	in rear-1	G.E.
G.V	7,000	.....	.....	132½	solid	36x6	36x4d	amid-u	Edison*	.....	60*	12*	375*	.....	40	in rear-1	G.E.
G.V	10,000	.....	.....	141½	solid	36x7	36x5	amid-u	Edison*	.....	60*	6*	.....	.....	35	in rear-1	G.E.
Lansden....M	4,000	.....	.....	120	solid	36x4	36x3d	amid-u	Ironclad	.....	.....	.....	.....	50	40	unit-j-1	G.E.
Lansden....M	7,000	.....	.....	130	solid	36x5	36x4d	amid-u	Ironclad	.....	.....	.....	.....	45	40	unit-j-1	G.E.
Lansden....M	10,000	.....	.....	142	solid	36x6	36x5d	amid-u	Ironclad	.....	.....	.....	.....	40	35	unit-j-1	G.E.
Lansden....M	12,000	.....	.....	142	solid	36x6	36x6d	amid-u	Ironclad	.....	.....	.....	.....	40	30	unit-j-1	G.E.
Walker....M	1,000	.....	.....	93*	solid	34x3	36x3½	amid-u	Edison*	.....	.....	.....	.....	.....	.....	unit-x-1	West.
Walker....K	2,000	.....	.....	96*	solid	34x3½	36x4	amid-u	Edison*	.....	.....	.....	.....	.....	.....	unit-x-1	West.
Walker....L	4,000	.....	.....	110	solid	38x4	38x6	amid-u	Edison*	.....	.....	.....	.....	.....	.....	unit-x-1	West.
Walker....D	6,000	.....	.....	130	solid	36x5	38x4d	amid-u	Edison*	.....	.....	.....	.....	.....	.....	unit-x-1	West.
Walker....E	8,000	.....	.....	144	solid	36x6	38x5d	amid-u	Edison*	.....	.....	.....	.....	.....	.....	unit-x-1	West.
Walker....N	10,000	.....	.....	144	solid	36x7	38x6d	amid-u	Edison*	.....	.....	.....	.....	.....	.....	unit-x-1	West.
Walker Tractor....2	20,000	.....	.....	52	solid	34x3½	38x5	amid-o	Edison*	.....	.....	.....	.....	.....	.....	unit-x-1	West.
Walker Tractor....3	30,000	.....	.....	70	solid	34x4	38x6	amid-o	Edison*	.....	.....	.....	.....	.....	.....	unit-x-1	West.
Ward....WS	750	.....	.....	88	solid	32x2½	32x2½	u-seat	Edison-G4	.....	65	5	100	.....	35*	amid-1	.....
Ward....WA	1,000	.....	.....	90	solid	32x3	34x3½	amid-u	Edison-G7	.....	60	6	.....	.....	35*	in front-1	.....
Ward....WB	2,000	.....	.....	102	solid	34x3½	36x4	amid-u	Edison-G9	.....	60	6	225	.....	35*	in front-1	.....
Ward....WD	4,000	.....	.....	114	solid	36x4	38x6	amid-u	Edison-G11	.....	60	6	275	.....	30*	in front-1	.....
Ward....WF	7,000	.....	.....	132	solid	38x6	40x8	amid-u	Edison-G14	.....	60	6	350	.....	25*	in front-1	.....
Ward....WH	10,000	.....	.....	144	solid	40x8	42x10	amid-u	Edison-G18	.....	60	6	425	.....	20*	in front-1	.....

Industrial Trucks

Automatic....Mill	.....	.....	.....	38	solid	16*x3	16*x3½	amid-o*	Edison-A4*	.....	40*	4*	150*	.....	.....	in front-1	.....
Automatic Tract....D	.....	.....	.....	38	solid	16x2	16x3½	amid-o*	Edison-A4*	.....	40*	4*	150*	.....	.....	in front-1	.....
Automatic Tract....S	.....	.....	.....	36	solid	16x3	16x3½	amid-o	Edison-A4*	.....	40*	4*	150*	.....	.....	amid	.....
Automatic Tract....T	.....	.....	.....	38	solid	.....	.....	amid-u	Edison-A6*	.....	30*	4*	225*	.....	.....	in front-1	.....
Automatic....L	.....	.....	.....	51	solid	10x5	16x3½	rear-o	Edison-A6*	.....	24*	3*	225*	.....	.....	in rear-2	.....
Automatic....4,000	4,000	.....	.....	72	solid	27½x3	27½x3½	.....	Edison-A6*	.....	24*	3*	225*	.....	.....	unit-x-1	.....
Automatic....4,000	4,000	.....	.....	72	solid	27½x2½	27½x3½	rear-o	Edison-A6*	.....	24*	3*	225*	.....	.....	unit-x-1	.....
Automatic....H	4,000	.....	.....	51	solid	10x5	16x3½	rear-o	Edison-A6*	.....	24*	3*	225*	.....	.....	in rear-1	.....
Automatic....E	4,000	.....	.....	52	solid	16x3	16x3½	rear-o	Edison-A6*	.....	24*	3*	225*	.....	.....	amid-1	.....
Automatic....D	4,000	.....	.....	38	solid	16x3	16x3½	rear-o	Edison-A4*	.....	20*	.....	150*	.....	.....	in front-1	.....
Electromobile....R	2,500	.....	.....	52	solid	9x5d	20x3	rear-o	Ironclad	11	15	1	158	.....	.....	unit-j-1	Wagner
Electromobile....A	3,000	.....	.....	43	solid	20x3	20x3	amid-u	Ironclad*	7*	15*	1*	100*	.....	.....	unit-j-1	Wagner
Electromobile....B	3,000	.....	.....	52	solid	20x3	20x3½	amid-u	Ironclad*	7*	24*	2*	100*	.....	.....	unit-j-1	Wagner
Electromobile....CS	4,000	.....	.....	52	solid	20x3½	20x3½	amid-u	Ironclad*	12*	15*	1*	230*	.....	.....	unit-j-1	Wagner
Electromobile....D	4,000	.....	.....	60½	solid	20x3½	20x3½	amid-u	Ironclad*	9*	24*	2*	125*	.....	.....	unit-j-1	Wagner
Electromobile....T-E	15,000	.....	.....	30	solid	20x3	20x3½	front-u	Ironclad*	11*	24*	2*	158*	.....	.....	unit-j-1	Wagner
Electromobile....T-EJ	15,000	.....	.....	30	solid	20x3	20x3½	front-u	Ironclad*	11*	24*	2*	158*	.....	.....	unit-j-1	Wagner
Elwell-Parker...SA-SC-SE	.....	.....	.....	.....	solid	27½x3½	27½x3½	front-o	lead*	15*	12*	.....	196*	.....	.....	front	.....
Elwell-Parker....DD-DG	.....	.....	.....	.....	solid	27½x3½	27½x3½	front-u	lead*	15*	12*	1*	196*	.....	.....	front	.....
Elwell-Parker....IB-ID	.....	.....	.....	.....	solid	15x3½	15x3½	front-u	lead*	17*	12*	.....	192*	.....	.....	front	.....
Elwell-Parker....F-W	.....	.....	.....	.....	solid	21½x3½	10½*x3½	amid-u	lead*	15*	12*	.....	196*	.....	.....	front	.....
Elwell-Parker....F-I	.....	.....	.....	.....	solid	21*x3½	10½*x5	u-hood*	lead*	15*	24*	.....	392*	.....	.....	front	.....
Elwell-Parker	.....	.....	.....	.....	solid	21½x3½	10½x5	front-u	lead*	15*	12*	.....	196*	.....	.....	front	.....
Elwell-Parker....E	.....	.....	.....	.....	solid	21½x3½	10½x5	u-hood	lead*	15*	12*	1*	196*	.....	.....	front	.....
Lansden....BB	750	.....	.....	90	solid*	32x3	32x3	seat-u	Ironclad	.....	.....	.....	.....	65	60	unit-x-1	G.E.
Lansden....BB	1,000	.....	.....	92	solid	34x2½	34x2½	amid-u	Ironclad	.....	.....	.....	.....	65	60	unit-x-1	G.E.
Lansden....M	1,000	.....	.....	96	solid	36x3½	36x3	amid-u	Ironclad	.....	.....	.....	.....	50	40	unit-j-1	G.E.
Lansden....M	2,000	.....	.....	106	solid	36x3	36x3½	amid-u	Ironclad	.....	.....	.....	.....	55	45	unit-j-1	G.E.
Lansing Tractor....C	4,000	.....	.....	33	solid	18x3	18x4	amid-o	Ironclad*	11*	24*	3*	157½*	35	20	unit-x-1	West.
Lansing Tractor....H	5,000	.....	.....	60	solid	18x4	18x5	amid-u	Ironclad*	9*	24*	4*	126*	30	15	unit-x-1	West.
Lansing Tractor....D	10,000	.....	.....	42	solid	18x3	18x5	amid-o	Ironclad*	17*	24*	6*	252*	35	20	unit-x-1	West.
Mercury Tractor....Z	.....	1,715	1,205	40½	solid	15x3½	20½x3½	rear-o	Edison-A6*	.....	30*	5*	.....	.....	.....	amid-1	G.E.
Mercury Tractor....X	.....	2,190	1,490	40	solid	16x3	20x3½	rear-o	Edison*	.....	.....	.....	.....	.....	.....	amid-1	Diehl
Transmobile....EE21	4,000	.....	.....	66½	solid	20x3½	10x4	u-hood	Edison-A8*	.....	24*	1	300*	.....	.....	amid-1	G.E.

ABBREVIATIONS—Types of Construction

*—with other options
amid—amidships
amid-o—amidships, over frame.
amid-u—amidships, underslung below frame
btw-seats — between seats
cent—center
d—dual
front-u—in front, under frame
Her-gear—Herringbone gears
l-plat—to left of platform
l-seat—to left of seat
rad-rd—radius rods
rear-o—at rear, over frame
r-seat—to right of seat
rol-chain—roller chain
s-chain—silent chain
sp-gear-f—spur gear to front wheels
st-col—on steering column
sub-fr—sub frame
top-wm—top worm
top-wm-f—top worm to front wheels
tor-arm—torque arm
u-floor—under floor
u-hood—under hood
unit-j—unit with jackshaft
unit-x—unit with axle
u-plat—under platform
u-wheel—under steering wheel
u-seat—under seat
½-ell—½ elliptic
½-trans—½ transverse elliptic
¾-ell—¾ elliptic

ABBREVIATIONS—Parts Makers. **Ironclad**—Exide Ironclad type. **G. E.**—General Electric **West**—Westinghouse

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Commercial Vehicle Chassis Listed on for the 1918 Season

Designed for Indoor Application

MOTOR					CONTROLLER			DRIVE						SPRINGS		CONTROL		
Winding	Horse-power	Voltage	SPEED IN MILES PER HOUR		Location	SPEEDS		GEARING		Total Gear-Ratio	Torque Taken By	Propulsion Taken By		Front	Rear	Steer	Controller Lever	Name and Model
			Light	Loaded		Ahead	Reverse	First Reduction	Final Reduction									
series	2.5	85*	15	13½	st-col	4	2	spur-gear	spur-gear	10.00–1	springs*	rad-rd*		¾-ell	½-ell	wheel-l	u-wheel	C.T.
series	3.2	85*	14	12	st-col	4	2	spur-gear	spur-gear	11.50–1	springs*	rad-rd*		¾-ell	½-ell	wheel-l	u-wheel	C.T.
series	5.0	85*	12	10	st-col	4	2	spur-gear	spur-gear	12.14–1	springs*	rad-rd*		¾-ell	½-ell	wheel-l	u-wheel	C.T.
	7.0	85*	11	9	st-col	4	2	spur-gear	spur-gear	17.32–1	springs*	rad-rd*		¾-ell	½-ell	wheel-l	u-wheel	C.T.
	7.0	85*	9	7	st-col	4	2	spur-gear	spur-gear	20.14–1	springs*	rad-rd*		¾-ell	½-ell	wheel-l	u-wheel	C.T.
series	12.0	88	8	6	u-seat	5	5	direct	bevel	25.00–1	springs*	rad-rd*		¾-ell	½-ell	wheel-r	btw seats	Couple Gear A
series	10.0	88	8	6	u-seat	5	5	direct	bevel	25.00–1	springs*	rad-rd*		¾-ell	½-ell	wheel-r	btw seats	Couple Gear ALDF
series	10.0	88	8	6	u-seat	5	5	direct	bevel	25.00–1	springs*	rad-rd*		¾-ell	½-ell*	wheel-r	btw seats	Couple Gear ACDF
series	2.5	85	14	12	u-seat	5	2	s-chain	rol-chn	12.92–1	tor-a	rad-rd		½-ell	½-ell	wheel-l	l-seat	G.V.
series	3.5	85	12	10	u-seat	5	2	s-chain	rol-chn	10.76–1		rad-rd		½-ell	½-ell	wheel-l	l-seat	G.V.
series	4.5	85	11	9	u-seat	5	2	s-chain	rol-chn	11.61–1	rad-rd	rad-rd		½-ell	½-ell	wheel-l	l-seat	G.V.
series	6.0	85	10	8	u-seat	5	2	s-chain	rol-chn	14.00–1	rad-rd	rad-rd		½-ell	½-ell	wheel-l	l-seat	G.V.
series	7.0	85	9	7	u-seat	5	2	s-chain	rol-chain	14.00–1	rad-rd	rad-rd		½-ell	½-ell	wheel-l	l-seat	G.V.
series		60	10	8*	in dash	4	2	bevel	rol-chn		springs	springs		½-ell	½-ell	wheel-l	u-wheel	Lansden M
series		60	9	8*	in dash	4	2	bevel	rol-chn		springs	springs		½-ell	½-ell	wheel-l	u-wheel	Lansden M
series		60	8	6*	in dash	4	2	bevel	rol-chn		springs	springs		½-ell	½-ell	wheel-l	u-wheel	Lansden M
series		60	8	6*	in dash	4	2	bevel	rol-chn		springs	springs		½-ell	½-ell	wheel-l	u-wheel	Lansden M
series		60*	16	15	u-seat	5	5	direct		17.00–1	springs	springs		½-ell	½-ell	wheel-l*	l-seat	Walker M
series		60*	15	14	u-seat	5	5	direct		17.00–1	springs	springs		½-ell	½-ell	wheel-l*	l-seat	Walker K
series		60*	14	13	u-seat	5	5	direct		17.00–1	springs	springs		½-ell	½-ell	wheel-l*	l-seat	Walker L
series		60*	12	11	u-seat	5	5	direct		16.00–1	springs	springs		½-ell	½-ell	wheel-l*	l-seat	Walker D
series		60*	11	10	u-seat	5	5	direct		16.00–1	springs	springs		½-ell	½-ell	wheel-l*	l-seat	Walker E
series		60*	11	10	u-seat	5	5	direct		16.00–1	springs	springs		½-ell	½-ell	wheel-l*		Walker N
series		60*	10	6	u-seat	5	5	drect			springs	springs		½-ell	½-ell	wheel-l*	l-seat	Walker Tractor 2
series		60*	10	6	u-seat	5	5	direct			springs	springs		½-ell	½-ell	wheel-l*	l-seat	Walker Tractor 3
series		80		10*	u-floor	5	2	direct	sp-bev		springs	springs		½-ell	½-ell	wheel-l	u-wheel	Ward WS
series		60		10*	u-seat	4	2	none	worm		springs	springs		½-ell	½-ell	wheel-l	l-seat	Ward WA
series		60		10*	u-seat	4	2	none	worm		springs	springs		½-ell	½-ell	wheel-l	l-seat	Ward WB
series		60		8½*	u-seat	4	2	none	worm		springs	springs		½-ell	½-ell	wheel-l	l-seat	Ward WD
series		60		6*	u-seat	4	2	none	worm		springs	springs		½-ell	½-ell	wheel-l	l-seat	Ward WF
series		60		6*	u-seat	4	2	none	worm		springs	springs		½-ell	½-ell	wheel-l	l-seat	Ward WH

Industrial Trucks

series		48*			b-seat	3	3	s-chain*	rol-chain	12.25–1	springs	springs		coil	coil	wheel-l	l-seat	Automatic Mill
series		48*			in dash	3	3	s-chain*	rol-chain	12.25–1	springs			coil	coil	lever-r	right	Automatic Tract D
series		48*			b-seat	3	3	s-chain*	rol-chain	12.25–1	tor-arm	tor-arm		coil	coil	lever-c	l-seat	Automatic Tract S
series		48*			u-seat	3	3	worm	worm	14.33–1						lever-r	r-seat	Automatic Tract T
series		48*			in dash	3	3	spur gear	spur gear	10.00–1						lever-l	right	Automatic L
series		48*			u-plat	3	3	worm	worm	14.33–1	tor-arm	tor-arm				lever-l	right	Automatic
series		48*			u-plat	3	3	worm	worm	14.33–1						lever-l	right	Automatic
series		48*			in dash	3	3	spur gear	spur gear	10.00–1	springs*	springs				lever-l	right	Automatic H
series		48*			in dash	3	3	s-chain*	rol-chain	12.25–1	tor-arm	springs		coil	coil	lever-r	left	Automatic E
series		48*			in dash	3	3	s-chain*	rol-chain	12.00–1		springs		coil	coil	lever-r	left	Automatic D
series		30	5	4	o-frame	4	4	s-chain	rol-chain	14.00–1					coil	lever-r	left	Electromobile R
series		30	5	4	u-plat	4	4	s-chain	rol-chain	14.00–1				coil	coil	lever-r	left	Electromobile A
series		50	8	7	u-plat	4	4	s-chain	rol-chain	14.00–1				coil	coil	lever-r	left	Electromobile B
series		30	5	4	u-plat	4	4	s-chain	rol-chain	14.00–1				coil	coil	lever-r	left	Electromobile CS
series		50	8	7	u-plat	4	4	s-chain	rol-chain	14.00–1				coil	coil	lever-r	left	Electromobile D
series		50	8	7	u-plat	4	4	s-chain	rol-chain	14.00–1				coil	coil	lever-r	left	Electromobile T-E
series		50	8	7	u-plat	4	4	s-chain	rol-chain	14.00–1				coil	coil	lever-r	l-seat	Electromobile T-EJ
series		24			in dash	3	3	none*	top wm-f*							lever-r	left	Elwell-Parker SA-SC-SE
series		24			in dash	3	3	none*	top wm-f*							lever-r	left	Elwell-Parker DD-DG
		24			in dash	3	3	none*	top worm							lever-r	left	Elwell-Parker IB-ID
		24				3	3	spur-gear	sp-gear-f							lever-r	left	Elwell-Parker F-W
series		24			in dash	3	3	none*	top wm*							lever-r	left	Elwell-Parker F-I
series		24				3	3	spur gear	sp-gear							lever-r	left	Elwell-Parker
series		24			in dash	3	3	sp-gear	sp-gear-f							lever-r	left	Elwell-Parker E
series		48	16	15	in dash	4	2	direct	Her-gear		tor-arm	springs		½-ell	½-ell	wheel-l	u-wheel	Lansden BB
series					in dash	4	2	direct	Her-hear		tor-arm	springs		½-ell	½-ell	wheel-l	u-wheel	Lansden BB
series		60	14	12	in dash	4	2	bevel gr	rol-chn		springs	springs		½-ell	½-ell	wheel-l	u-wheel	Lansden M
series		60	12	10*	in dash	4	2	bevel gr	rol-chn		springs	springs		½-ell	½-ell	wheel-l	u-wheel	Lansden M
series		48	7½	4	u-seat	4	4	none	worm	10.00–1	sub-fr	sub-fr		½-ell	none	wheel-r*	l-seat*	Lansing Tractor C
series		48	7½	4	u-seat	4	4	none	worm	10.00–1	tor-arm	springs		½-ell	½-ell	wheel-r*	l-seat*	Lansing Tractor H
series		48	7½	4	u-seat	4	4	none	worm	10.00–1	sub-fr	sub-fr		½-ell	none	wheel-r*	l-seat*	Lansing Tractor D
series		32	6½		u-seat	3	2		worm	17.50–1	sub-fr	sub-fr		none	none	lever-r	btw seats	Mercury Tractor Z
series		42	8		u-seat	3	3		worm	17.00–1	tor-arm	tor-arm		½-trans	½-ell	lever-	r-seat	Mercury Tractor X
series	2	24	7		st-col	3	3	bevel	bevel	17.00–1						wheel-		Transmobile EE21

ABBREVIATIONS—Types of Construction

*—with other options
amid—amidships
amid-o—amidships, over frame.
amid-u—amidships, underslung below frame
btw-seats — between seats
cent—center
d—dual
front-u—in front, under frame
Her-gear—Herringbone gears
l-plat—to left of platform
l-seat—to left of seat
rad-rd—radius rods
rear-o—at rear, over frame
r-seat—to right of seat
rol-chain—roller chain
s-chain—silent chain
sp-gear-f—spur gear to front wheels
st-col—on steering column
sub-fr—sub frame
top-wm—top worm
top_wm-f—top worm to front wheels
tor-arm—torque arm
u-floor—under floor
u-hood—under hood
unit-j—unit with jack-shaft
unit-x—unit with axle
u-plat—under platform
u-wheel—under steering wheel
u-seat—under seat
½-ell—½ elliptic
½-trans—½ transverse elliptic
¾-ell—¾ elliptic

ABBREVIATIONS—Parts Makers. **Ironclad**—Exide Ironclad type. **G. E.**—General Electric. **West**—Westinghouse.

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A Department of

BETTER MECHANICS

No. 42

Truck Maintenance and Repair

Federal 2-Ton Truck

In This Issue { 1—*Oiling, lubrication and inspection.*
2—*Engine adjustments and maintenance.*

By S. T. Williams

THOUGH the points emphasized in this issue apply specifically to the Federal 2-ton truck, in practically every case they also apply to each of the other Federal models. In general, they also apply to any truck.

Oiling, Lubrication and Inspection

NINETY per cent of all truck trouble is the direct result of abuse—insufficient lubrication, lack of inspection and adjustment, combined with overloading and overspeeding. The mechanic cannot prevent overloading and speeding, possibly, but he can lessen their effect by proper lubrication and inspection. For this reason, he should study the lubricating and inspection requirements of every truck that is in his care, and know how to adjust the various units.

Each truck should be thoroughly inspected every week. This necessitates washing and cleaning all parts, for by this alone can defects be discovered before actual breakdown. Though the specific adjustment, care, and repair of the various units are taken up in detail later, this weekly inspection should include the following:

1—Draining and flushing the radiator and stopping of all leaks in the cooling system.

2—Compression test and adjustment of the pushrods. The pushrod clearance on all models should be about .012 in. cold.

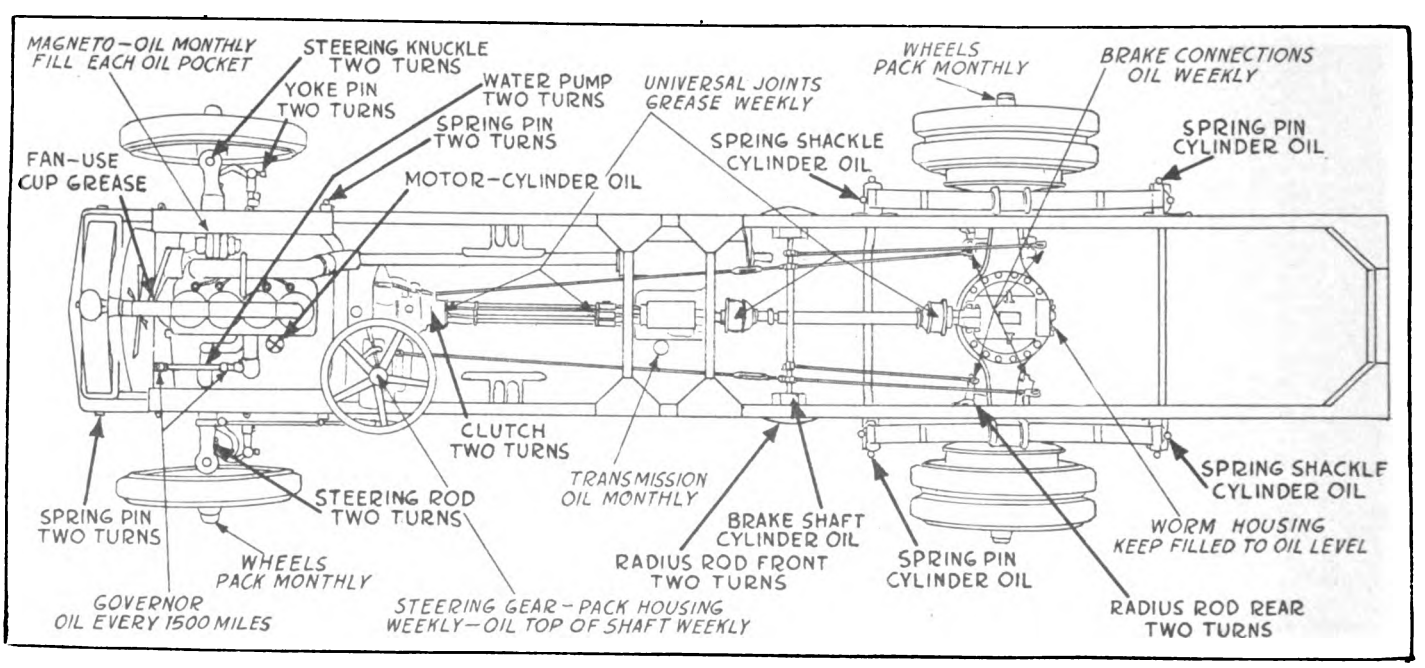


Fig. 1—Oiling and inspection are even more necessary in truck maintenance than in passenger car work—because the driver's sole idea is to get there and back as quickly as possible, and with as much load as possible. The above chart shows where, when and how each part should receive attention. The heavy arrows point to parts that should be watched daily

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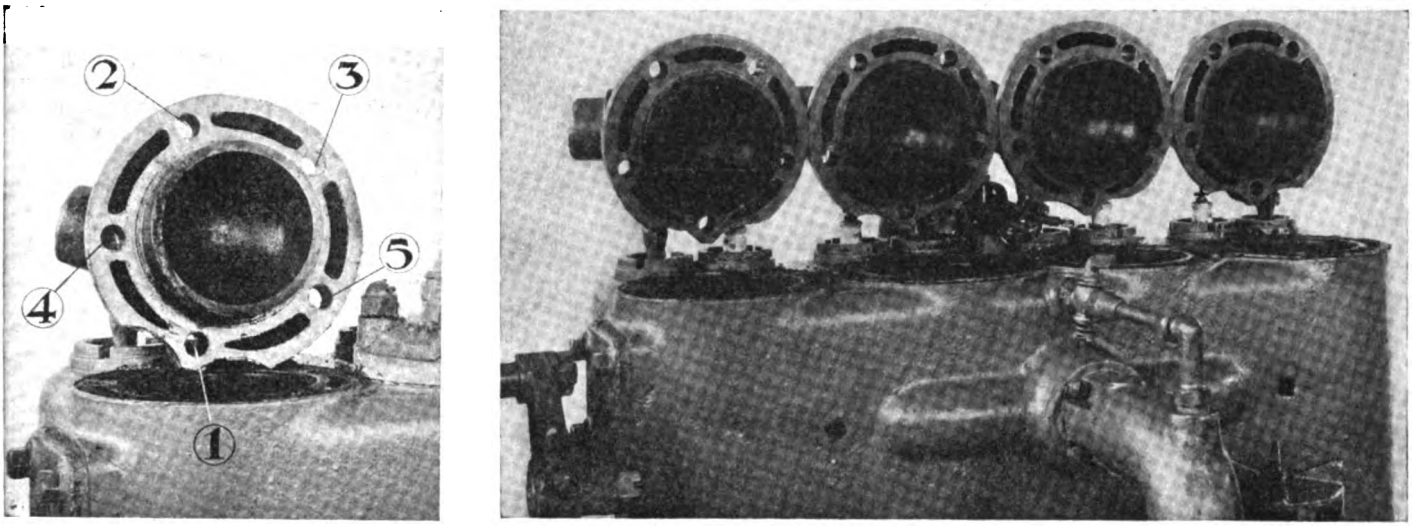


Fig. 2—Either a single head may be removed, permitting the carbon to be scraped out, or all of the heads may be removed in a string. On replacement, the nuts should be drawn tight in the order shown at the left so that the head will not be pinched.

3—Cleaning the breaker points on the magneto. The points should be flat, and separate about .012 in.

4—Clean the spark plugs, and adjust the points to separate about .025 in.

5—Lubricate all parts as shown by the oiling diagram in Fig. 1.

6—Make any adjustments found necessary during the inspection. The adjustment of the more important units is described in detail later.

All spring clip bolts, engine bolts, radiator retaining bolts, etc., should be carefully gone over and tightened if loose. Loose rivets in the frame should be reheaded and tightened. Any looseness in the wheel bearings should be taken up. Any looseness of parts in truck practice is more dangerous than in passenger car practice, because of the heavy weights involved, and the fact that all parts are subject to shocks due to the solid tires.

Every 500 miles the oil reservoir filter located near the rear end of the lower crankcase should be removed and cleaned, the system flushed out with kerosene and 8 qts. of cylinder oil poured in after replacing the filter.

The filter is held in place by four screws, and these should be tightened evenly on replacement to prevent oil leakage. Before starting the engine it is advisable to remove the pipe plug at the right of the petcock at the front of the oil pump (see Fig. 4) and force a gunful of oil into the pump to prime it. This will assure operation of the pump from the start and prevent possible injury to the bearings.

The clutch used is the Borg & Beck,* identical in construction to those used in passenger cars. It requires no lubrication other than in the clutch shaft pilot bearings, which are cared for from the grease cup shown in Fig. 1. If slipping or grabbing in present adjustment is necessary, a large hand hole plate at the base of the clutch housing may be easily removed, giving free access to the clutch. The adjustment follows:

1—Loosen the two slot bolts in the clutch cover, bolted to the flywheel.

2—Block clutch pedal in the "out" position.

3—To tighten clutch, move these screws "clockwise" about ½ in. in the slots and tighten them. Moving the slot screws in a "counter clockwise" direction will loosen the clutch. When the bolts have been swung to the extreme ends of the slots repeat holes for the bolts will be found at the opposite slot ends. In this way the clutch can be adjusted until the friction rings are worn out.

A complete description of the care and repair of a Borg & Beck clutch is contained in the Jan. 10, 1917, issue. Reprints are available.

Engine Adjustments and Maintenance

Removing Carbon

INDIVIDUAL cylinder heads are used on this engine, and they may be removed either singly or altogether, as shown in Fig. 2. The best practice, however, is to remove them altogether, as by this it is only necessary to remove one water connection, and all the combustion chambers are cleaned at one time.

Each head is held in place by five bolts, and after these are removed the heads may be tapped with a lead hammer and easily lifted from place. It is not advisable to loosen the heads with the point of a screwdriver, as to do so might injure the gaskets between the heads and the cylinder.

As the cylinder heads are spherical in form, a round nosed scraper should be used to remove the carbon, and a common putty knife may be readily ground to the shape most suitable for this purpose. This may also be used for the piston heads and walls of the combustion chambers.

The cylinder head gaskets may be used many times, if not abused, and no shellac used when these gaskets are replaced.

In tightening the cylinder head bolts, all bolts should first be brought snug, the head tapped with a lead hammer to relieve any possible binding, and the bolts tightened progressively in the order shown in Fig. 2. This will assure a firm, even contact between the head and cylinder, and prevent any possible leakage.

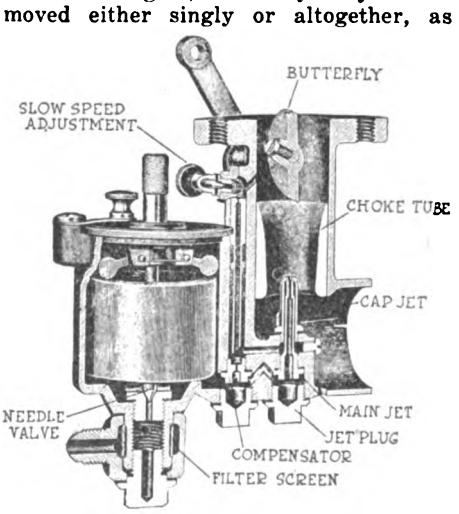


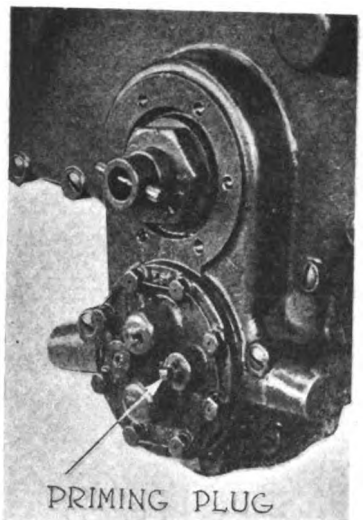
Fig. 3—About the only adjustment the mechanic will have to make on the Zenith carbureter is through the slow speed adjustment, for idling. If it is taken apart for cleaning, the jets should be screwed in tightly

Carbureter Adjustments

The carbureter used on this engine is a Zenith model 0-4 and, as a rule, the only adjustment necessary is that for slow speed. The slow speed adjustment screw, shown in Fig. 3, is turned in to give a richer mixture, and out to give a leaner mixture.

This adjustment is made on the floor, with the engine properly warmed up, and its purpose is to enable the engine to idle in a satisfactory manner. Many factors prevent idling properly, and these should be eliminated before the adjustment is made. They are: Leaky plugs or priming cups, leaky valve caps, pitted valves, loose valve stems or too much spark advance.

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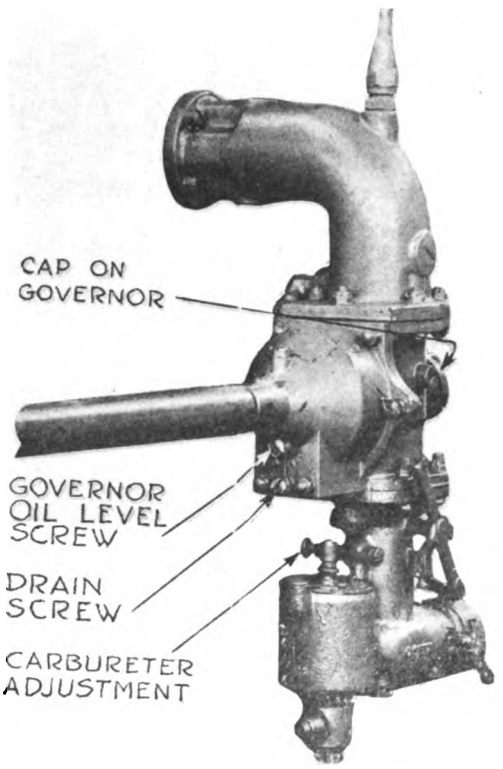


Fig. 4—All of the important points of adjustment on the engine are shown in these two views. Note particularly the parts of the governor assembly that require lubrication

Heating is essential to satisfactory performance of the carbureter, and this is effected by means of a water jacketed manifold. The stopcock at the top of the water outlet pipe should always be open in cold weather, and the manifold should be warm after the engine has been running a short time.

Occasionally, particularly in a new car, scale will stop up the filter screen, causing the engine to miss and backfire. This necessitates taking the carbureter apart for cleaning, and it may be assembled without disturbing the adjustment. The main points to note in the assembly is that the float cover is seated squarely; that the various jets are screwed down tight, and that the butterfly is so connected that it may open fully.

Governor Care

Every 1500 miles the governor oil level and drain screws (see Fig. 4) should be removed and the governor housing flushed with kerosene oil. It should then be filled to the level of the upper screw with a good grade of light engine oil.

The governor drive gears should be lubricated weekly by removing the caps shown in Fig. 4, pouring in a spoonful of cylinder oil and then filling the housing with grease.

The above comprises all the work that the average mechanic should attempt on the governor, and all further work should be done by the governor makers.

Ignition Timing Hints

THE timing of the spark on this engine is fixed—that is, it always occurs at the same point in the stroke. The proper setting is a balance between full retard and full advance. If, however, it is set too late, the engine will overheat and not develop full power, and if too far advanced will cause a kick back on cranking, and a knock when pulling. When either of these is present the spark must be reset—as is also the case when the engine has been torn down.

As too great a clearance in the exhaust valves will also cause overheating, and as the magneto is timed from the closing of the exhaust valves, the valve tappets should be adjusted before timing the magneto. To do this, the engine is warmed up and the tappets adjusted to about .012 in. (cold) clearance from the valve stems.

The engine is then slowly cranked over, with the petcocks open, and the ignition off, until the rear exhaust valve (nearest the flywheel) just closes. This point can readily be determined by grasping the tappett of the rear exhaust valve. The instant the valve is closed the tappet is free. At this point the cranking is stopped.

The distributer plate is then removed and the driving axle of the magneto armature turned until the setting screw point above the distributer is half way between the marks L-R on the distributer. The magneto drive coupling is fastened in this position and the magneto secured in place.

No attention need be paid to the breaker in making this setting except to see that the points are clean and flat and set to open .012 in. The method of adjustment is shown in Fig. 6.

(To be continued)

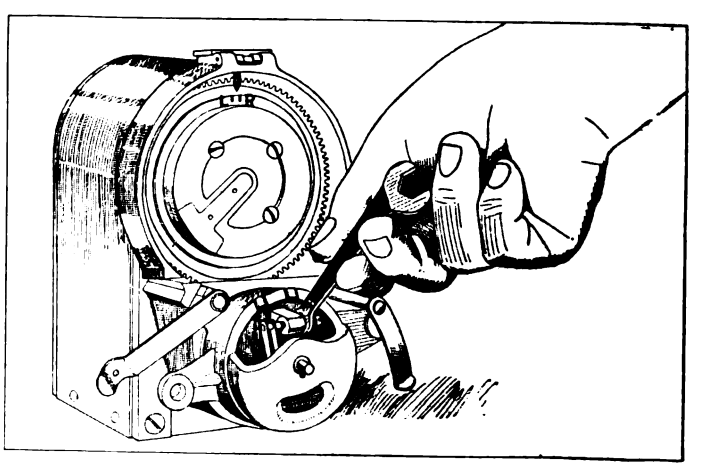


Fig. 6 — With the rear exhaust valve just closed, the brass pointer at the distributor housing should lie between the L and the R on the rotor. The method of setting the breaker points is also shown. They should be about .012 in. apart

Order Army Trucks

WASHINGTON, Oct. 27—All contracts for the new heavy-duty class B war trucks will be placed by November 1, according to the present plans of the Quartermaster's Department. Already orders for axles, motors, transmissions and steering gears have been placed for 10,000 trucks and the remaining contracts will be let shortly.

The trucks are purchased by the Quartermaster's Department working in cooperation with the War Industries Board. The director of the military truck production department arranges with all makers of a specified part for a conference and at this conference the form of contract is discussed and specifications detailed. The Board then turns all available information over to Brigadier-General Chauncey B. Baker who places the actual contracts following the submission of bids by parts makers. It is expected that the first delivery of trucks will commence in January and that 10,000 will be completed by June or July.

"Parts makers," says General Baker, "have been willing to sell the Government at the same terms on a single order as they receive from large companies buying on long-term contracts and if the patriotism of the industry is to be judged by the attitude of these parts makers, it would be 100 per cent."

Heavy Trading in Louisville

LOUISVILLE, Oct. 27—Leading dealers state that the used car market is much better than it was at this time last year. While the purchase of machines to take care of some of the big volume of traffic to and from Camp Zachary Taylor has stimulated sales. Dealers have plenty of used cars in stock. Some of the dealers report that more trades are being made than ever before. Various methods are used to dispose of used cars, the most popular and profitable, according to dealers, being classified ads. Circular letters and personal solicitation also are used.

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THE LAW

As It Applies to Dealers, Garagemen, Repairmen

The editor of this department is glad to answer questions. In sending queries, always include copies of contracts, notes, etc., to which you refer

By George F. Kaiser

Necessary Precautions

Editor Motor World: We have just moved into our new sales and service station and public garage, and wish to know if it is necessary for us to display signs in the garage as follows:

NOT RESPONSIBLE FOR FIRE, THEFT OR STORM DAMAGE TO CARS STORED IN THIS GARAGE

What we wish to determine is if we d not have these signs on display are we liable?—Fuller Motor Co., Minot, N. D.

Answer—The mere act of posting a notice of the kind mentioned in your letter does not of itself relieve you from any liability for injuries to the property of any of your customers. While it is not strictly necessary to post notices of this kind it is nevertheless a desirable thing to do, for oftentimes the mere fact that a customer has been in the habit of seeing such a sign whenever he entered your garage will cause him to realize that you are not an insurer of his goods. And he will therefore not be so apt to make a claim on you.

A garageman's liability for damage caused by fire, theft or storm is briefly as follows:

1. He is responsible for the lack of ordinary care and prudence in protecting property from damage by fire.

2. He is likewise responsible for the lack of ordinary care and prudence in safeguarding the property left with him from theft.

3. He is under obligation to his customers to take reasonable care to have buildings used for his purpose in proper condition, so that cars stored in them may be reasonably safe from storm and damage by the elements.

Watch the Sons

A son has no legal right to bind his father to a contract, although oftentimes dealers seem to believe that a son has that right. I personally know of any number of dealers who have formed the habit of handing out tires and accessories and of furnishing oil, gasoline and supplies to the sons of their customers.

Most of these dealers have been fortunate, as it has happened that the fathers in all cases have authorized the sons to purchase the supplies on their credit.

It is only a matter of time, however, when these dealers will find that they have given credit where the person to whom they have given the goods had no right or authority to charge them.

When this happens, and it always does sooner or later, these dealers will express great surprise that they have no legal right to recover the amount of their bill from the father, and when they find out that they have got to stand the loss they will be more careful in the future about giving credit where they are not sure that proper authority to charge the goods exists.

Can We Help?

Perhaps there is something about your contracts you do not understand.

We know we can help you if you will ask us.

And we shall be glad of the opportunity to be of service.

Write.

Give Prompt Notice

The importance of giving prompt notice of fires or accidents to insurance companies is something which is not appreciated by dealers in general.

It is very easy to lose all the benefits of insurance merely because you fail to give the *kind* of notice provided for in the policies immediately on the happening of the loss.

As soon as a fire or accident happens, the dealer should take out his insurance policies and examine them carefully, and then give notice to the company or its representative in the manner and at the time provided for in the policy.

If this is not done, an insurance company is fully justified in refusing to pay the loss.

Is Repairing Hazardous?

To those who know, the work of repairing a motor car might be thought a hazardous occupation. The Supreme Court of New York has decided otherwise, however, in a case where a chauffeur was injured while he was repairing his employer's motor car.

The employer had a motor car which he used himself. While the chauffeur was repairing it, one Sunday, a gasoline torch accidentally ignited and the chauffeur received burns which caused his death.

The Court held that the chauffeur's position was similar to that of a cook or a butler employed in a private house, and that neither of these occupations could be called hazardous.

Peculiarly enough, however, if a chauffeur, or a cook or a butler is employed by a person running a business for profit, the occupation is considered hazardous, and the employee is provided for in the State Compensation Law.

Using Trade Names

Since the war started the use of a trade name has greatly increased by those of foreign birth who fear that their business may be prejudiced by their own names. The use of a trade name is universally permitted, but in many states it is necessary to file an affidavit before business can be commenced under the assumed name.

The failure to file an affidavit of this kind is a misdemeanor in most cases and is punishable by fine, imprisonment or both.

Of course when a man picks out an assumed name to do business under he must be careful not to adopt a name which would lead people to believe that they are dealing with a partnership or a corporation.

Penalties for misuse of trade names in this respect have also been very generally provided for. In cases where trade names are adopted, the persons adopting them can sue or be sued, make contracts and do business under the trade name just as they did before.

A good illustration of a trade name would be "The Superb Garage." This would not be likely to be mistaken for a corporate name or a partnership name. If a name such as "The Superb Garage Co." were used, or "Jones & Smith's Garage" considerable confusion would arise in the minds of people who did not know if the business was being run as a corporation, a partnership or individually.

More Room for Waukesha

WAUKESHA, Oct. 27—The Waukesha Motor Co., Waukesha, Wis., which increased its capacity about 50 per cent during the last 6 months, has been obliged to enlarge its facilities about 50 per cent more in order to handle large Government contracts for motors and parts.

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Repairshop Shortcuts

From The Motor World Roadman

No. 1415—REMOVING TRUCK WHEELS

Because of the extreme weight of truck wheels it is difficult to remove them from the axles. This may be readily done by the aid of a strong shop creeper. The wheel is jacked free from the ground, the retaining nuts removed, and the creeper placed beneath the wheel. The jack is then lowered until a part of the weight of the wheel rests upon it, and the wheel pulled from place without lifting it in any manner.—C. B. Crawford, Lawrence Motor Co., Pittsburgh.

No. 1416—BODY HAULING PLATFORM

A platform for adapting the express-type of truck body to permit carrying other truck bodies is illustrated. It comprises simply a series of planks that are supported to the level of the express body edges by four U-shaped channel members. This provides a flat surface that is so necessary for carrying truck bodies or other loads of similar nature.—F. E. Cooper, McAlister Bros., Pittsburgh.

No. 1417—WHEEL PULLER

It is not an easy matter to attach the ordinary wheel puller to many types of truck wheel hubs. For this reason the work is facilitated in many cases by the use of a special wheel puller. One such puller comprises a metal ring that will just slip over the wheel hub, and having no lateral screws that permit it to be locked securely in place. Two diametrically opposite pins on this ring offer a purchase for the puller hooks, and the pressure is applied to the end of the axle through a central screw. This screw should be case-hardened, and threaded loosely in the cross bar, permitting a blow to be struck to the end of the screw, as is necessary in case of set wheels.—C. D. Crawford, Lawrence Motor Co., Pittsburgh.

No. 1418—TRUCK SERVICE CAR

In the larger truck service stations, where the amount of work merits the investment, a special truck service or wrecking car should be constructed. Such a service car should incorporate a hoisting device or crane that will permit a wrecked truck to be lifted and carried to the service station. This crane comprises a 5 in. I-beam supported on two triangular rests that are riveted to the frame of the truck. On the horizontal I-beam a chain hoist is carried by means of a trolley. As the beam extends out over the rear of the service car, the front end of a wrecked truck may be lifted from the ground, and the service car back in under it. A fifth wheel, or some similar device, is mounted on the rear of the service car, and carries the front end of the wrecked car. By means of this device, any car having a broken front end may be brought to the service station, and any car may be carried without a separate operator.—F. B. Hewel, Martin-Whitehall Co., Pittsburgh.

No. 1419—TRUCK REPAIR JACKS

When removing the rear axle of a truck it is necessary that the frame and body be supported in some manner. Though a chain block or hoist is usually at hand, if this be used, it will be impossible to use it for other purposes in the shop at the same time. Besides, the use of a chain block or hoist is usually not as safe as if some other means of support be provided. The best method is to construct two strong wooden horses, or auxiliary jacks, which may be placed beneath the rear end of the truck frame, after it has been lifted by a hoist. By these the truck is securely held, and the hoisting equipment is free for the normal use of the shop.—F. B. Hewel, Martin-Whitehall Co., Pittsburgh.

No. 1420—CRANKSHAFT HOIST

When scraping in crankshaft bearings it is necessary that the crank be repeatedly lifted from place in the crankcase, and placed on the bench. By the provision of a suspended lever fitted with two hooks the mechanic can quickly lift the crankshaft from position and swing it to rest on two metal supports that are placed at the side of the engine stand. These rests should be covered with tire tape to prevent injury to the crankshaft bearings, as should the hooks at the end of the lever chains.—C. F. Moore, Pierce-Arrow Service Station, Pittsburgh.

No. 1421—STRAIGHTENING AXLES

The point of curvature in bent rear axles may be readily determined and axles straightened by suspending the axle on a pair of centers rigidly attached to the floor, applying a gage to the axle while rotating, and placing pressure through a screw jack at the point of bend. The centers are supported on cast iron standards, placed about 56 in. apart, one of the centers being fixed and the other adjustable, so that the axle may be clamped in place. A small electric motor mounted at the base of one of the standards is belted to the axle, and causes it to rotate. When rotating a planer gauge is used to determine the point of bend, after which the pressure is applied through the screw jack.—Willys-Overland Service Station, New York.

No. 1422—REPAIRSHOP TRUCK

As units entering into the construction of trucks are exceptionally heavy, it is difficult to move them from one part of the shop to another. Of course if a traveling crane is at hand, this is easy, but such is not often the case. In the smaller shops a small, sturdy truck, of hard wood bolted together, and mounted on two wooden wheels, will permit all parts to be moved readily. The feature of this truck is that it is low, and it is not necessary to raise the parts any distance. This truck also has an exceptionally short turning radius, and is so small that it may be placed directly beneath the truck, and the part dropped on to it as it is removed.—C. D. Crawford, Lawrence Motor Car Co., Pittsburgh.

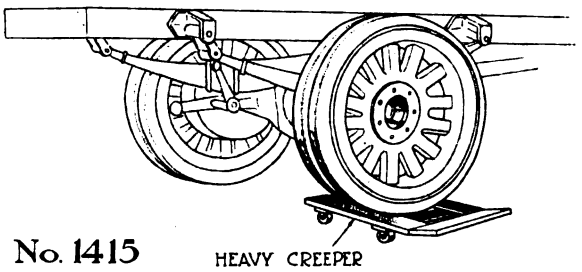
No. 1423—MAKE-SHIFT ARBOR PRESS

A make-shift arbor press may readily be constructed by suspending an 8 x 8 in. beam from the ceiling of the repairshop by means of an overhead trolley, and using this beam as a fulcrum upon which to brace a common screw jack, by which the pressure is applied. A wooden stand supporting a metal face plate is a convenient accessory to the device. The advantage of this type of press is that it will accommodate a wide range of work; permits extreme pressures to be applied readily and may be swung out of the way when not in use.—C. F. Mohr, Pierce-Arrow Service Station, Pittsburgh.

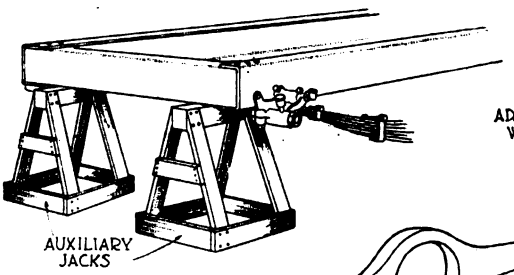
No. 1424—TOWING TRUCK

Though the usual two-wheel touring dolly is entirely satisfactory for passenger car work, the usual practice seems to be to use a four-wheel dolly or pulling truck for truck service work. Such a truck comprises a heavy, wooden platform, mounted on four large steel wheels that are carried on Hyatt bearings. Two old brake drums, telescoped together, serve as a pivot on which the front wheels swing. A length of channel steel bolted to the upper surface offers a rest for the axle of the wrecked car, and as the truck follows the service car, it may be used as a one-man towing device.—C. B. Crawford, Lawrence Motor Co., Pittsburgh.

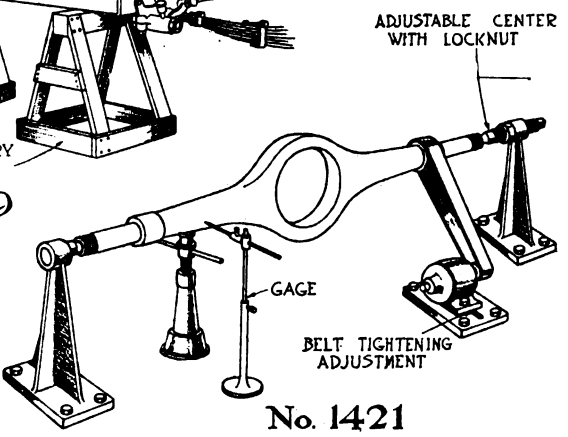
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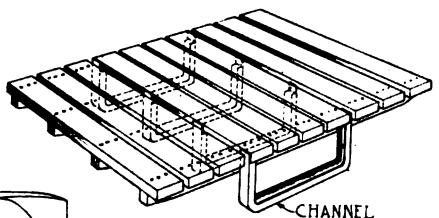
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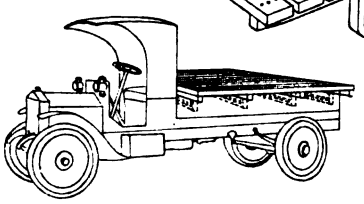


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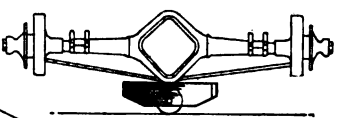


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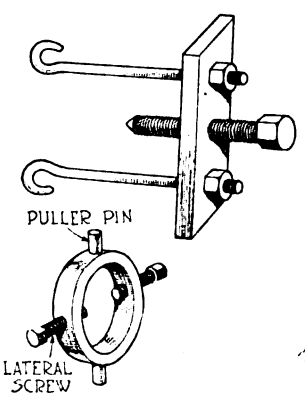


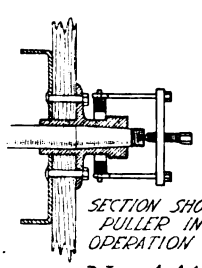


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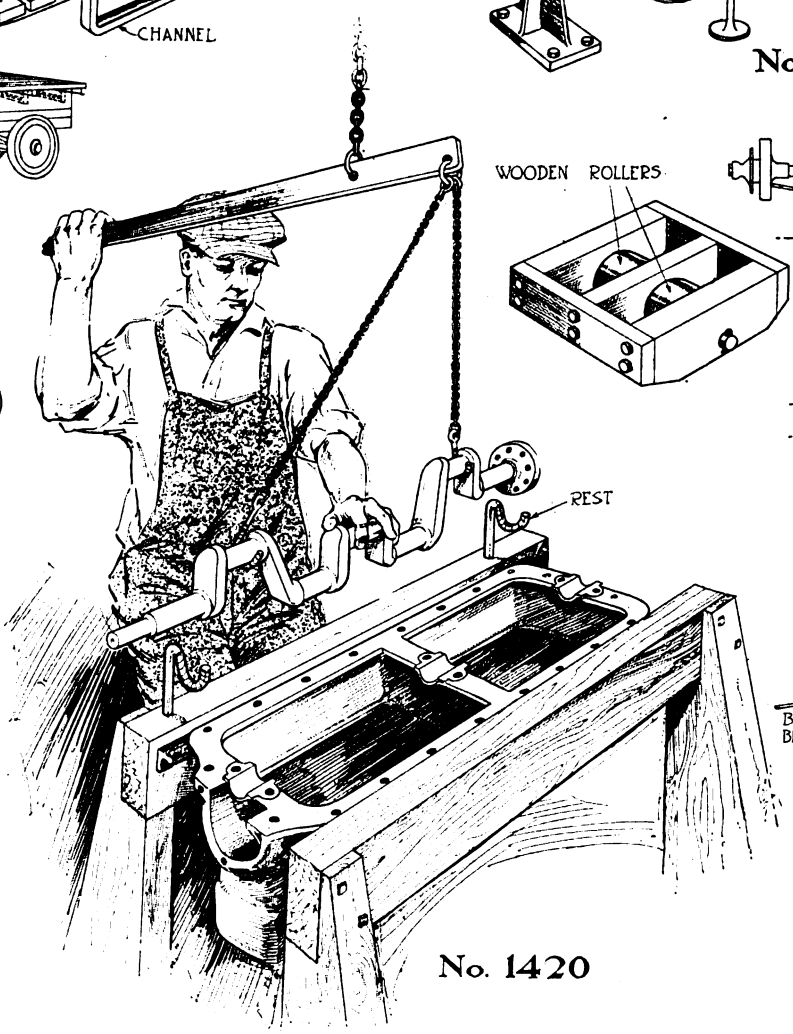


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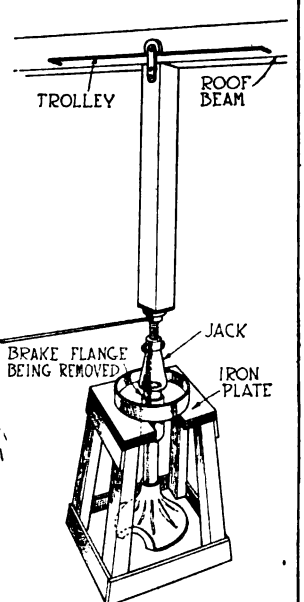




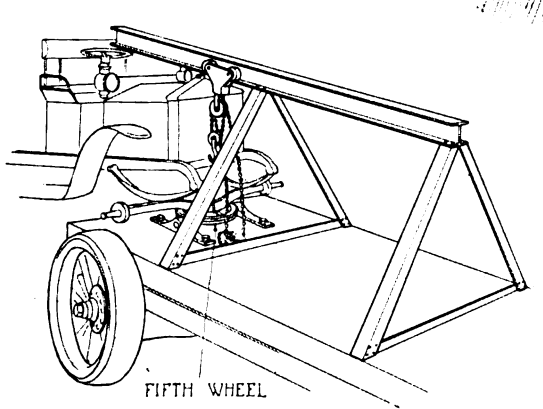
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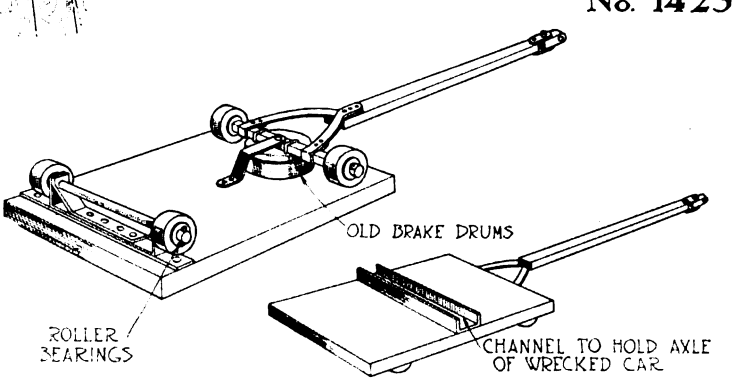
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Editorial Observation

"Men Ill at Ease"

THESE are days when dealers should be keeping their houses in order—when they should watch their businesses more closely than ever. Though four or five dealers in nearly every city report good business with not enough cars to supply demand, the fact remains that business on the whole is off and has been off for months. To-day it is off from 50 to 60 per cent. And this fact is reflected by the attitude of bankers who are becoming more and more reluctant to advance money to dealers. Banks which heretofore have loaned large sums freely and quickly, now place the matter before their Board of Directors before taking action.

Dealers must face this situation fairly and squarely. They must not forget that we are in a great war. They must not forget that war means a different kind of business and these changes that are constantly taking place all around us must be carefully studied that the bark of commerce may be safely steered.

They must not forget that we are subscribing for our second Liberty Loan—France has had her seventh and England her sixth. We have several more coming. Undoubtedly this second loan of ours has slowed up trade a bit, but is that anything to get excited about? Look at the haberdasher. What is he going to do with the gloves and hats and shirts and ties that the young men who have gone to the war camps are not buying? Business is very unusual with him.

There will have to be many readjustments in the retail and wholesale trade. These readjustments are already starting. And in this readjustment the strong dealer will get stronger and the weak one will get weaker. *The weak ones must go.* That is an irresistible law of nature.

Merely having a big salesroom, a big repairshop and a big overhead does not necessarily imply sufficient strength to withstand the pressure which the dealer is feeling and will feel to a still greater degree in the not far distant future.

Too many dealers have imagined they were great dealers simply because they sold great volumes of cars. Cars have been in great demand. No great salesmanship was necessary. Only a good order-taker has been necessary. To-day this condition has changed. The order-taker is finding himself pushed out in the cold. The real salesman has not yet taken his place, and that is one reason for the falling off in business. But he will take his place. Just as surely as the stronger plants drive out the weaker ones, *just so surely will the order-taker be supplanted by the salesman.*

To-day factories are looking about them for real representation. They want dealers whose organizations contain only salesmen and not order-takers. For the factories have come to realize that only in such organizations can success be found.

Beyond question, big changes are coming and these changes will work hardships on some. But this is no time to stampede. That should be left for the weaker sisters of the trade. The stronger ones will calmly study the situation—and *will plan far more carefully than they have ever planned before.*

They will learn with Hawthorne that "the world owes all its onward impulses to men ill at ease."

The Fall Show

FALL shows are being held this year to a geater extent than ever before. The dealers seem to have discovered that as an autumn business stimulus, and especially this present autumn, the fall show helps out greatly.

In some cases the show is devoted entirely to inclosed cars, and even in those shows which are not inclosed car exhibitions those cars get prominent positions. Comparatively, it doesn't cost much to hold a show. The exhibitors generally find that it is worth while as an investment. Assuredly, anything that can stimulate business from now until next spring is worth while to the dealers—and then some.

St. Louis and Boston have staged Open Weeks. These consisted of salesrooms all dolled up for the visiting public, extra advertising in the newspapers, special features of various kinds and a general big push that should accelerate trade.

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What Others Think

THIS page is for the use of MOTOR WORLD readers with something to say. Letters on subjects of interest to dealers, garagemen, repairmen and jobbers are always welcome—especially if they are timely and brief.—THE EDITOR.

Do You Give Tips?

The following letter was received by MOTOR WORLD *from the Mid-City Garage & Supply Co. of Baltimore, whose methods to overcome the tipping evil were described in* MOTOR WORLD *of Sept.* 26, 1917:

The writer has read with interest your article in Motor World in regard to eliminating the tipping system and your establishment of a regular human being business proposition.

I beg to extend to you the congratulations of myself and co-workers and fellow travelers in so emphasizing a true American manhood spirit against this damnable tipping evil. The financial report of your business before and after proves beyond a doubt that in running a business it is not at all necessary to tolerate a bunch of tipmongers, vultures and crums, in order to make a success of it, as some of our worthy hotel managers would lead us to believe.

Thousands of hotels, dining rooms, restaurants and other kinds of business are suffering from the same disease that crippled you in the early days, "Vulturism."

It has closed more hotels, more restaurants, more garages and taxicab companies, and hundreds of more are to follow unless the proprietors and managers soon realize that the vulture has his hands in their cash register from the day he goes to work until they get rid of him. Every human hates a tipmonger just like a barber hates a safety razor.

What Tipping Does

Over sixty thousand traveling men today go into their hotels, get a room and walk out of the front door three times a day for their meals—and sometimes walk from seven to ten blocks; not because their hotel charges on food are too high. The vulture and his transportation charges on food is what drives us into the street. We search the town for a place where we can find a human being to wait on us. I know hundreds of travelers that will walk to the depot in a rainstorm—not because of an exorbitant taxi charge, but because of the crum that drives it. He refuses to give up to this tipmonger and inconveniences himself, and in order not to come in contact with one and his thank yous.

I also know lots of traveling men like myself that drive cars who never buy oil or gasoline around a garage—not because the price is not right, but it's the tipmonger that expects your charge for selling it to you. A lot of others, like myself, have taken our machines out of different garages because of the pest that insisted working, a la Pullman porter, with a duster every time you went after your car, then handed out his thank you when you didn't come across. We asked for storage and were paying for it. We did not ask for groom service. Nor would we stand for any such service enforced on us.

Voicing the sentiments of the Anti-Tipping Association, I beg to state we do not want something for nothing; we are willing to pay for what we get and all the service that goes with it, but we want to pay it all on one bill, and we are going to do it if we have to sleep in the wagon yard and eat our meals in the quick and dirty.

A Traveling Man's Experience

I do not write this from imagination but from experience of 12 years' travels which have carried me into every city in the United States of 50,000 population and hundreds of them as low as 5000. I have talked with more traveling men than some people ever dreamed were on the road.

I know why they leave their hotels for their meals. I know why they don't buy supplies from this and that garage. I know why some of them walk instead of using a taxi with their firms willing to pay the charges. With over 50,000 anti-tippers already and still growing, some more people are going to realize it before long, providing the sheriff does not get too hasty. And there is not a short GUY in the bunch.

Let me give you one of many illustrations of what a tipmonger will do for a restaurant. In a Southern city of over 100,000 there was a restaurant, and a good one. It fed at least 40 per cent of the hotels' guests, saying nothing of the large city trade it had. Personally acquainted with the proprietor, I know he did not have much capital when he started. One could go into this restaurant and eat three times a day, 365 days in the year, and you would never have your food thrown down in front of you. Nor would you hear a thank you, or any other expression or movement that is so common among the dining room crooks. Just because you forget to leave the usual drayage charge on your food his business not only flourished but he made money. After 2 years of successful business he was induced by the waiters' union, I presume, to put in a bunch of pests. They would work for almost nothing and crum their salary out of his guests. To make a long story short, they broke him in 12 months.

Help, like many other things that you get for nothing, is the most expensive thing in the world, and is getting more so every day. The A. T. A. has ample funds for the poor and hungry and the unfortunate, but not a cent for the parasite, tipmonger and vulture.

As a member of the Anti-Tipping Association, I not only wish to congratulate you but to wish you every success that you deserve. May your business grow and prosper. With hopes that your present spacious establishment will in a short time be unable to take care of the business that will be heaped upon you. Should an A. T. A. come your way I feel confident he will find your number.—D. C. Mevarc, Minneapolis.

Milwaukee Wants Truck Organization

MILWAUKEE, Oct. 27—Distributers and dealers in commercial vehicles in Milwaukee are contemplating the organization of a new association, modeled after the Milwaukee Automobile Dealers, Inc., one of the most successful associations of passenger car dealers in the United States. The matter has not yet come to a head, but it is intended that the new organization be perfected in time to conduct an exclusive commercial car show in the Milwaukee Auditorium some time early in 1918.

Firestone Expects 100 Per Cent Increase

AKRON, Oct. 27—According to an estimate made by H. S. Firestone of the Firestone Tire & Rubber Co., the company will do a $60,000,000 business this year. This will mark an increase of over 100 per cent above the business done last year, and the following table will show in brief the progress of the company since 1904:

Year	Amount of Business	Cars Running	Business Per Car
1917....	$60,000,000*	3,500,000	$17.10
1916....	36,000,000	1,753,000	20.50
1910....	5,300,000	350,000	15.10
1906....	1,000,000	80,000	12.50
1904....	460,000	30,000	15.30

*Estimated.

Tires from Indianapolis

INDIANAPOLIS, Oct. 27—The Superior Tire Co. of Anderson, Ind., will within the next 30 days start breaking ground for the erection of a new factory. The company, which is capitalized at $750,000, will erect a two-story concrete structure with a floor space of 50,000 square feet. The plant will have a capacity of 500 tires daily. The president is O. Hibner, a former sales manager of the Knight Tire & Rubber Co., Canton, O. The consulting engineer is Charles A. Besaw, president of the Besaw Tire and Rubber Co., and the vice president is W. I. O'Bryan of Cleveland; the secretary, W. W. Campbell of Toledo.

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The Self-Contained Man

And How He Stays in His Little Tin Can Until Somebody Comes Along and Throws the Can Overboard

By Ray W. Sherman

"REILLY," said Tommy Trumbull, sales manager and official agitator for C. J. Reilly, Inc., "I don't feel right."

"Stomach?"

"No, not that! It isn't anything like that. I just feel sort of—sort of—well—all out of ideas—if you get what I mean."

"Sort of run down like a clock. Need winding up. Is that it?" laughed Reilly.

"That describes it better than anything so far. And what I want to know is how to get wound up again.

"I started off on this job all full of spizz and such stuff and I thought I was going to be a regular young whirlwind. I figured out all sorts of sales ideas and things and seemed to be getting on beautifully. Things seem to be going all right yet, but I feel as though I couldn't keep shoving them ahead as fast as when I started. I hate to think I'm a 'new broom' that has worn out."

Reilly mused and said nothing. He drummed with a pencil, turned it over and drummed with the other end, twiddled it between his fingers and looked at Tommy.

Needs a Fresh Start

"You need a fresh start. Is that the idea?" he asked.

"That seems to be the situation."

"I'm glad you realize it," replied Reilly, "because if you realize it you have a good chance of making the start. If you didn't see the danger signal you might run into trouble and never know how it happened.

"I don't think you have anything to worry about. You can get started again. We all have these spells, whether we know it or not. We run down just the same as you have. They say every man reaches that run-down stage around forty years of age and settles down on an executive basis. But I don't believe there is any reason why it should be that way.

"You have merely been playing the part of a self-contained man. A——"

"A self-con-what?" exclaimed Tommy.

"A self-contained man. You have been running on your own steam and haven't been putting anything into the fire-box. Naturally, you'll run down after a while, just the same as any so-called perpetual motion machine runs down. You have done what so many men of good ideas do. They work out all the ideas they have in their heads and then fizzle because they don't restock their ideas.

"I have seen lots of sales managers and advertising men work themselves out and run down. Then they fizzle and quit. It is a common saying that certain corporations work men out in a couple of years and then discard them. Many of these so-called discards are to blame for this condition. They are self-contained men—and they run down.

"Every man of this type is an idea machine, and he can't work unless he works in the right way. The sales manager who is going to keep forging ahead must not be a self-contained man, and neither must the successful advertising worker.

"The sales manager who starts at a job with a fresh viewpoint and a lot of good ideas does well at the start because he is tackling a new job in which he takes a deep interest. But as soon as the job becomes old and everything he sees or touches becomes old and worn things assume a routine nature. What he should do is be constantly reaching into new things and refreshing his mind.

"The advertising man who would keep fresh must do something besides work in an office. If he is a factory man selling cars he must get out into the field often. He must not merely dash around the show circuit in the winter, make a few speeches at dinners, talk with a few dealers, be a good fellow and come back. He must go out among the dealers when they are in their own places of business. He must see how they sell, why people buy, why they don't buy, why certain cars are strong competition, why certain dealers are weak and get right down in the dirt of the business and get all covered with the muck of it.

Change of Atmosphere Refreshing

"When he does that he gets so refreshed that he starts all over again every time he comes back to the office. He discovers that there is more to life than the ad man's viewpoint. He finds that he can make his own efforts most effective if he is fully posted on the efforts of all the rest of the world.

"And so it is with you. You have gone through a hard and busy summer. You have stuck pretty close to the office and we have done a good bit of business. But it has been a long hard period in which you have worked in a self-contained way. Now you feel the need of winding yourself up again. As a matter of fact you should keep wound up all the time."

"But how? That's what I want to know."

"Well, for a starter, there's a meeting of the Motor Mechanicians to-night at the association club rooms. Go down there and sit around for a while. Talk to these boys and get their angles on the motor car business. Listen to what they say and make some notes. Maybe you'll learn something about the business that never occurred to you before.

"Then, next week take a couple of days off and go down and live with your Lindville dealer. Stick around with him. Hang around his office. Help him. Get in touch with his trade. Putter around the office and the shop all he'll let you. Get down to earth and be one of the people of the organization you're trying to manage. See how it sounds to read some of the letters we send out. Maybe they have a different tone when you open them in Lindville.

"Go to a show about once a week, a funny one or a sad one or anything that has some plot or life in it. Don't spend all your time at the movies. They aren't just the thing. They are merely a sort of spectacle that tires the eyes if seen in excess and have very little plot. Go to a regular show.

Good Books Good Companions

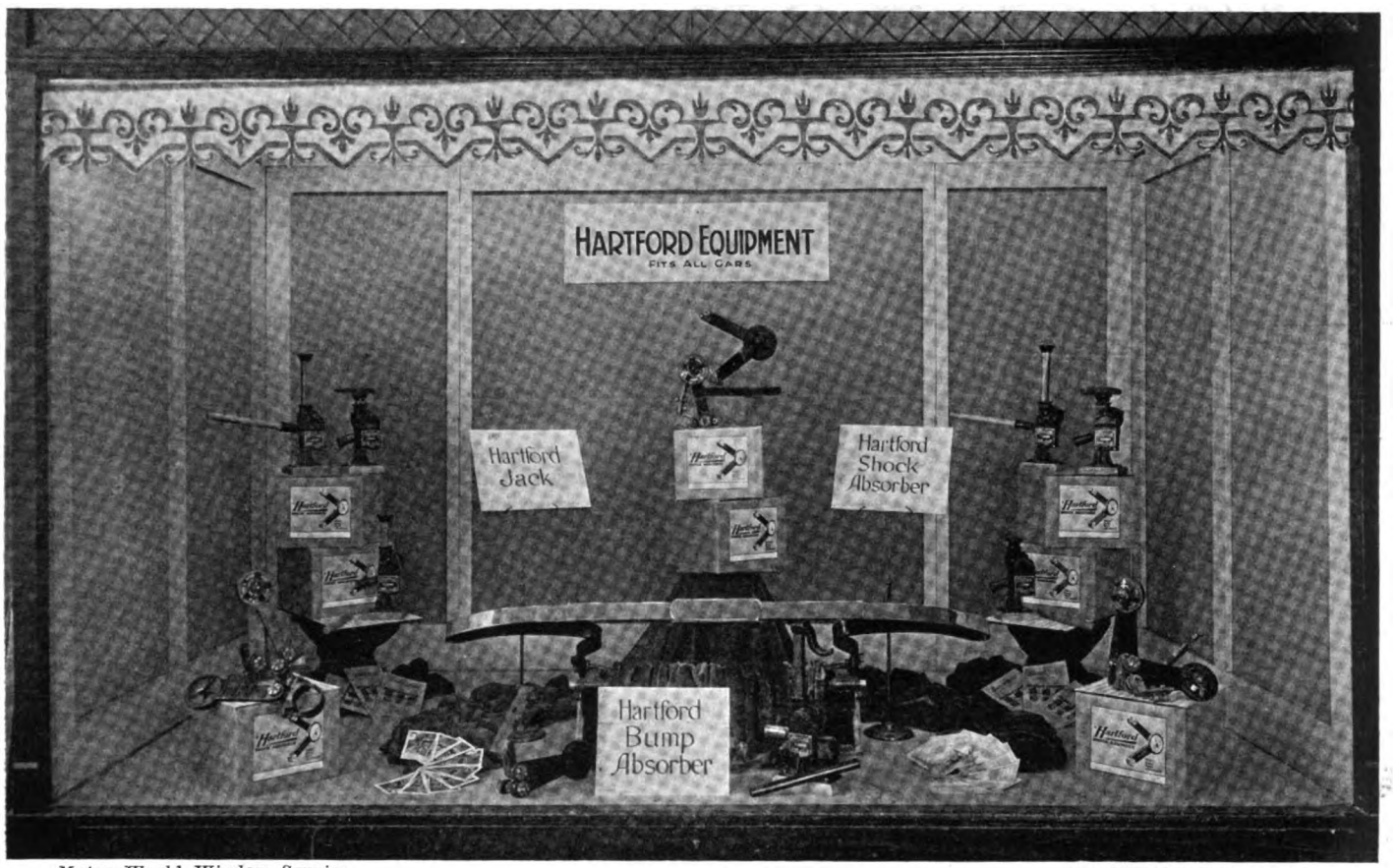
"Leave the office for an afternoon now and then and take a long run out into the country these crisp fall days. Don't spend too many evenings at home. And when you do stay at home have a few good books on hand. Don't waste all your time on lightheaded, nonsensical fiction—and don't read anything but heavy stuff. Have some books on salesmanship, science, history, psychology or something and then once in a while switch from one to the other. One good plan is to keep two books going at once—a heavy book and a piece of fiction.

"In that way you'll keep the ideas and thoughts and feelings of other men flowing through your mind. You'll get out of the little tin can in which you are self-contained and will grow and broaden amazingly. You'll surprise yourself. The world is full of refreshing ideas and thoughts simply waiting for you to come in contact with them.

"That's all you need, Tommy."

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Motor World Window Service



Motor World Window Service *Fashion Camera Studios*

How to Trim This Window

Three pedestals are used, one 18-in. pedestal in the center and one 12-in. on each side. If pedestals are not available, boxes can be substituted. Glass or wooden shelves are used on each pedestal. On the end shelves the boxes are set back about 8 in. and a piece of cardboard or crepe paper cut to fit the width of glass placed there before placing the jack. The same applies to the cardboard boxes on each side of the bump absorber, which is held up in the center by a jack. The draping used around the pedestals in this window was green velour, but can be substituted by silk-o-lene, sateen, cheesecloth or a rep material. The following colors in material can be used in keeping with boxes—red, green, blue or brown.

The letters below are to be mailed out the Saturday of the week before this display is set up. Use any one of them, or use one the week before and the others at intervals of 5 or 7 days.

Use These 3 Letters

Jack Letter

—and then he cussed.

His tire had blown out, he had a jack that wouldn't jack and he thought of the long hard struggle he was going to have changing tires.

If he had a Hartford jack in his kit it would have been smooth sailing. The axle would have gone up in a minute and would have STAYED up until the tire was changed.

You should have a Hartford jack in your kit. Punctures and blow-outs come to all of us, and they always come when we least expect them. It seems as though tires pick out the most inconvenient times and places for giving trouble.

Stop at our store and see how and why a Hartford jack can save you time and trouble.

The man who is prepared avoids difficulty.

P. S.—Hartford also makes a bump absorber and a shock absorber that will interest you.

Shock Absorber Letter

Cold weather makes the road rough.

Snow doesn't prevent driving—it adds zest—but it does put in a few bumps here and there.

If you are to get the greatest enjoyment from your driving during the next five months—or for all next year, for that matter—you should have the bumps taken out of the road.

We take them out.

How?

With the Hartford shock absorber. There is a set to fit your car, and it won't take long to put them on if you'll just drive down and stop a few minutes.

Every car should be equipped with these riding comforts. They make life more worth living.

Come in and see them.

P. S.—Hartford also has a jack and a bump absorber that will interest you.

Bump Absorber Letter

How much would it cost to repair the damage if somebody backed into your car, or if you accidentally bumped some other car?

These accidents will happen with the best of us. If you want to know just how common pumps are, look over the bent fenders on the cars you pass, each one of which certainly is NOT a beauty spot.

A Hartford bump absorber will prevent these little dents and wrinkles and, in addition, may save you a costly repair bill. The cost of a bump absorber is very small when compared with an ordinary sized repair bill.

It is cheap protection.

There is a Hartford that will fit YOUR car.

Drop in and see what an attractive and low-priced article it is.

P. S.—Hartford also has a shock absorber and a trouble-saving jack that will interest you.

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Winter Business

November Action Means January Profits

Investigate New Fields That Will Bring You Extra Profits

WINTER is going to try to make a slump in your regular business. YOUR desire is to prevent a slump. One way out—and a good way—is to develop lines of business to take the place of lines that slow up. Thus, if car sales slow up, sell trucks, or sell farm lighting systems or do something you haven't done before. There is no reason why your income should dwindle just because your normal business is affected by winter—provided you plan and put those plans into execution.

IN the Winter Business Number of Motor World considerable space was devoted to these extra activities—pages 9 to 21. You should keep this issue always beside you and make it a guide to your winter activities. Study the editorial pages and also the advertisements, for in the advertisements you will find many suggestions as to how you can MAKE MONEY THIS WINTER.

Farm tractors—There is a big field for the small farm tractor. If you have not an agency you should begin to investigate the field at once. Find out what tractors there are, which is the best, which best suits your community, and which will best make profits for you. Get into this strong right away.

Garage heating plants—These devices are being pushed by the manufacturers. Advertising is being run in local newspapers and publications of national circulation. All this is helping the demand which already exists. The one needed link is a dealer to sell the goods. Investigate this field.

Gas engines—Every reason in the world why the garageman and car dealer should also be the gas engine dealer. People need gas engines for many purposes. Look over the gas engine business-getting plan on page 11 of the Winter Business Number of Motor World, and then investigate and get ready to start. Do it NOW.

Carbureters—In certain classes of cars there is a big field for carbureter sales. Start now going after this business. Why wait until the winter slump is upon you before trying to get out of it? Why not KEEP out?

Truck Attachments—Are you getting YOUR SHARE of the truck attachment business? There IS business of this kind and you should get yours. All you need to do is investigate the question, get an agency—a good one—and use the plan on page 14 of the Winter Business Number. Start NOW.

Vulcanizing business—Tires need repairs after the long hard summer, and, more important still, you need the business of repairing them. Therefore, use the plan on page 14 of the Winter Business Number.

Trailers—There is a big field here. It is a profitable field. They are easy to sell. There is no service required. It is a clean business. Get after it. See page 16 of the Winter Business Number.

Fire Extinguishers—Page 17 of the Winter Business Number. These are goods that every one needs. Men are thinking serious thoughts these days. The extinguisher is a product that fits in with these thoughts. Sell some.

Ford starters—Every Ford owner wants one. Sell them this winter.

Winter clothing—This may be a new line with you, but it is one you can build up with profit. The plan is on page 18 of the Winter Business Number.

Farm lighting systems—On pages 20 and 21 of the Winter Business Number is a plan in detail, one of the best in the issue. There is a good chance for a big permanent business in this product. Better investigate at once.

Many other things—The things you can do to keep the wheels of business humming are many. The one great essential is ACTION. Thinking active thoughts in your office will get you nothing unless you ACT. Anybody can think of things to do but the man who will make money this winter is the man who DOES THINGS.

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Get Your Christmas Work Started *NOW*

WHEN CHRISTMAS comes, holiday cards are going to filter into your offices from friends and other business houses. Don't you remember how it was a year ago? And don't you remember how you then resolved that next year you too would send out some cards? The way to do it "this year" is to start NOW. You must order the cards, wait until they are printed, address the envelopes, stamp them and get everything all ready for dropping into the mails a few days before Christmas. Those who are going to use Christmas cards should start now. Did you see the cards shown on pages 12 and 13 of the Winter Business Number of MOTOR WORLD? *You can purchase those from* MOTOR WORLD *at a reasonable figure, imprinted with your own name, in case you don't find anything that suits you in your home town. But no matter where you get the cards, START NOW.*

Begin NOW to Fill Your Repairshop

Soon the ordinary touring-repair work is going to let up. It is probably letting up right now. But you have your shop rent to pay, you don't want to let your men go, and so the thing to do is start NOW to get in a lot of work for this winter. Old cars are going to be driven "another year" more than ever before. They need overhauling—and you need the business. Send out the letters shown below during November at intervals of one week. They will serve as a constant reminder.

Car Repair Letter No. 1

Your car has had a busy summer.

So have we.

But now neither your car nor our shop is as busy as a few weeks ago.

The summer's service has been rather hard on your car, and there are some things that need to be done to it before it is run another season.

If you will bring your car to us now for fixing and adjusting we can assure you far better service than later in the winter, when cars will be coming in just ahead of the spring touring season. We are always rushed then, which works to the inconvenience and disadvantage of both ourselves and our customers.

Right NOW we can give you plenty of time and attention and assure you lower prices than later on. It will assure you that your car will be ready later when you want it and will be a benefit to us in that it will keep us busy now when work is slack and relieve us of the rush when spring comes.

Please consult with us as soon as you conveniently can, because it is our desire to give you the best service and prices at our disposal.

Car Repair Letter No. 2

A few days ago we requested several of our car owner friends to bring their cars in for fixing and adjusting now and help us keep our shop busy and also to relieve us of the big load of work that comes just ahead of the spring season.

Quite a number responded and their cars are being rapidly fixed up in a manner and at a price that is highly satisfactory to them.

We have just a little leeway left in our working schedule and would like to handle a few more cars now instead of later in the season.

After a summer of use there probably are numerous little things that ought to be done to your car, and we will consider it a favor if you will let us serve you now instead of later in the season.

We have the best shop in town, capable men, up-to-date machinery, and can give you satisfaction. That we guarantee.

Drive down any day and let us inspect your car in order that you may know its real condition. Sometimes there are little things that you don't notice until they become big troubles.

Car Repair Letter No. 3

Running a car season after season without having it touched by a skilled mechanic is often considered a point of great merit in the car. But generally cars that aren't looked after once a year go to pieces all of a sudden some day and the owner can't understand why.

The reason is that the car was full of little bits of trouble all the time. They kept accumulating, but didn't affect the car's operation. Then all of a sudden they all grew big at once—and the end came.

After every season, especially one such as we have just had, your car should be looked over and at least tuned up.

It is our suggestion that you bring it to our shop, let our mechanics inspect it and advise you as to its condition.

Incidentally, we can give you better service NOW than later, because we are right between the summer and spring rushes. We have plenty of time and room to handle your work.

Drive down any day.

Sell Enclosed Cars

ENCLOSED car shows held in many cities indicate a greatly increasing interest on the part of the public in enclosed cars. This means that with a little pushing a lot of enclosed cars can be sold by dealers. It also means a slightly different form of merchandising. It means atmosphere, comfort, warmth, luxury and that style of work. In the best enclosed car shows there have been no lectures and no cut-away chassis. The only things shown have been the cars and their luxurious interiors. That is what "gets" people who can afford enclosed cars.

The selling of enclosed cars was planned on pages 22, 23 and 24 in the Winter Business Number of Motor World. There are good thoughts there for you even if you have worked out a plan all your own. Go after this business. It adds prestige and class to your establishment and there is a bigger profit in it.

Manufacturer and Jobber

Motor World wants to know how manufacturers and jobbers are assisting dealers to get Winter Business. Last winter some great work was done by numerous manufacturers and jobbers. So far as we could we told of these activities. Let's know about YOURS so we can tell the story. Have you Christmas goods, winter sales plans, special campaigns or anything that helps? Don't be bashful or modest.

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Truck Industry Has Expanded and Progressed During 1917—A Trade Epoch

NEW YORK, Oct. 27—Expansion and progress are the words which most accurately sum up the truck industry for 1917. There has been growth on every hand—healthy, enduring growth due to sound, strong demand. More lines of business are asking for trucks, businesses already using them are clamoring for more trucks.

Production is increased, dealers have been added, floor areas have been enlarged, new companies have sprung up, average distribution per company is wider, capital has been increased, and more attention is being given to the development of foreign trade.

With expansion has come a natural improvement and a tuning up of methods, production is more efficient, factory sales work is more effective, dealers and salesmen are being educated, inefficient dealers eliminated, and service is better standardized.

The result is that factories and dealers are working on a higher plane of efficiency with greater satisfaction and profit to both.

The past year has witnessed the advent of many passenger car makers into the truck industry. Those who make light cars have added light delivery trucks. This was largely caused by the discovery that many purchasers were buying solely for the chassis, which they use with the truck converter. Inasmuch as the makers decline to guarantee these, and also to safeguard their reputations and take advantage of the big light truck business, it was deemed advisable to make light delivery cars or light trucks. Among these are Buick, Chevrolet, Ford, Dodge, Maxwell, Overland and Briscoe.

PRODUCTION for 1918, it is estimated, will be 50 per cent greater than for this year. The increase is partly due to greater demand for both domestic aond foreign trade, but mainly it may be laid to the more general recognition of the utility of the truck. Economy is the national watchword and users and prospective users of trucks are beginning to realize that they may save money by their use. Better roads, improved service, improved trucks and more scientific understanding of the problems of transportation are important factors in the increased developments.

The rapid increase in truck production is the more promising when the labor and material difficulties that the manufacturers have had to face are considered, although these questions are not as serious as they have been.

Inasmuch as production figures are confidential it is impossible to name the outputs of any of the companies for this year or probable outputs for next year, but it is illuminating to quote some of the figures for 1917 and 1918 respectively as follows:

Manufacturers	Value of 1918 output	Per cent increase over 1917
A.....	$350,700	200
B.....	250,500	200
C.....	280,600	230
D.....	25,000	140
E.....	10,000	160
F.....	110,500	450

There are several which might be represented by each of these quotations. Of course there are some companies which have planned no increase or a very slight increase, but the average, as already stated, indicates that production will be 50 per cent greater next year.

To take care of the greater output enlargements in factory equipment or improvement of production methods have been adopted, and since selling the output is just as important as making it or, rather, must go hand in hand with production, dealers have been added, and those already in service are being made more efficient.

How They Have Expanded

It is impossible to give a complete summary of what has been done along these lines because all the figures are not available, but sufficient data are at hand to show the trend.

The Old Reliable has added 80,000 sq. ft. of floor space, making a total of 155,000. United Motors has corresponding figures of 53,000 and 73,000. The J. C. Wilson company has added a plant of 25,000 sq. ft., bringing the total area to 127,000. Locomobile, manufacturer of the Riker, has four more acres of floor space, or thirteen all together.

The Republic company, with 25 acres of factories, has added three buildings, 80 x 1000, 500 x 500 and 60 x 1000. Pierce, with 40 acres, has added 100,000 sq. ft.

Packard has built several new units and added a lot of machinery. Lippard-Steward, with 60,000 sq. ft., has built a 40 x 80 storage building and is contemplating more. The Grant Motor Car Corp., a newcomer in the commercial car field, has added 150,000 sq. ft. to 200,000 already possessed.

The Gramm-Bernstein company, with 162,000 sq. ft., has found it necessary to build 35,000 sq. ft. more and is also planning a $40,000 chassis assembly building and a $20,000 office.

The G. M. C. has provided a new building 100 x 110 for the Samson tractor; it has also built another structure 80 x 260, and has installed considerable new machinery. Federal has doubled its area, now having 300,000 sq. ft. Atterbury is building 250,000 sq. ft. and has now 430,000. Hurlburt now has 95,000 as compared with 75,000 a year ago. This does not by any means exhaust the list. It is simply a report which shows the general state of expansion.

Some concerns have been able to enlarge their output by changing their methods but without adding buildings, and others have found it desirable to do both. Group assembly of the chassis is rapidly being discarded in favor of progressive assembly. This is a refinement in manufacturing methods which not only increases the efficiency and capacity of the factory, but reduces the cost of the work and minimizes the amount of labor required, which is important in this time of labor stringency.

There are at least a dozen concerns using progressive assembly to-day which did not have it a year ago. Among these may be mentioned the United States Motor Co. of Cincinnati, the United Motors Co. of Grand Rapids and the Chicago Pneumatic Tool Co. The frame members come in from a shipping platform to an assembly rack which is a jig arranged so that the cross members are spotted exactly, making riveting and welding easy. It is mounted on tubular rails and may be moved readily by hand, accumulating progressively axles, wheels, gearset, motor, etc. When it has received its wheels the chassis is removed from the rails.

A study of the dealer figures shows two things, first, that factory sales

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organizations are more active and efficient, and the same holds true of the dealers. Denby, for example, has added twenty-five dealers during the year, making the total 300; Willys-Overland has put 423 more names on its roll, making it 4993; G. M. C. 42, total 380; Acason 20, total 25; Koehler 100, total 250; Hurlburt 20, total 45.

These increases, of course, are not anywhere in proportion to the plant enlargement and production which is to be expected, inasmuch as a large part of the increase will be absorbed partly because of increasing demand in territories occupied by established dealers, and secondarily, because they are learning to use better sales and service methods.

Some of the New Ones

Many new concerns have sprung into being and several manufacturers of passenger cars have at last awakened to the desirability of producing trucks. Among the former may be mentioned the Muskegon Engine Co., Muskegon, Mich.; Taylor Motor Truck Co., Fremont, O.; Rainier Motor Corp., New York; Day-Elder Motors Co., Newark; Rennoc-Leslie Motor Co., Philadelphia; Western Truck Mfg. Co., Chicago, and Bourne-Magnetic Truck Co., Philadelphia.

The Grant Motor Car Corp. launched in the truck business by purchasing the Denmo. The Clydesdale is not a new concern strictly speaking, but a combination of the companies manufacturing the Krebs, Lincoln and Clyde.

Development of foreign trade has been held up because of the lack of shipping facilities and also because of prohibitory war laws against exportation of trucks to certain foreign countries. Nevertheless foreign trade, including Canadian, is becoming an important branch of many concerns, and it is expected that there will be a brisk, general demand for all classes of vehicles in practically all countries the instant the war is over.

One concern states that because of adverse shipping conditions it has not been able to deliver any trucks outside of the Continent, but that the inquiries from far lands are increasing at an astonishingly rapid rate, letters coming from such out of the way corners as Java, Uruguay, Japan and many other distant points. The condition of this branch of the business may be summarized as follows:

Foreign Trade

Lippard-Stewart, fair; International Harvester Co., good; Harvey, developing; Gramm-Bernstein, good but no ships; Garford, 10 per cent of the gross; Federal, 10 per cent; Commerce, 20 per cent; Atterbury, looked good when it stopped; Acason, 10 per cent; Hurlburt, good.

The unprecedented demand for trucks the last few months, and which gives promise of continually increasing, has resulted in very favorable conditions. There is not a single company which complains of business conditions, although the war has been on six months and in that time there has been a marked decrease in passenger car sales.

Averaging the statements of the different makers, it may be said that business is varying from good to excellent, and there are many who complain that they are away behind in their deliveries; still others could have sold tens and in some cases hundreds of trucks if labor and materials had not held them up. The situation may be briefly epitomized as follows:

Business Is Good

Old Reliable, excellent; J. C. Wilson, increased; Studebaker, very good; Sanford, good; Lippard-Stewart, exceeds output; I. H. C., two months behind; Harvey, good; Gramm-Bernstein and Gary Motor Car Co., good; Day-Elder, very good; Columbia, 100 per cent increase; Hurlburt, good; United States, excellent, 100 per cent increase. This list shows in a way the healthy condition of the industry.

Labor and material are not giving as much trouble as formerly, probably because of the slackening demand for passenger cars. This seems to be particularly true of the materials situation. Many concerns still report that raw materials are hard to get. This is partly due to delay in freighting and also because of scarcity. Others state that units and parts are hard to obtain because of the excessive demand on parts makers.

The J. C. Wilson company. states that there is some trouble in obtaining parts; on the contrary, Studebaker says that the situation is good. Sanford calls it fair, Rainier reports some trouble, Pierce says that it is improving, Packard reports a shortage, G. M. C. states that it is slow but improving, Columbia calls the situation good, Acason states that it is O.K., United States reports no trouble, so the conclusion is that generally speaking the condition is improving, although the situation is far from being satisfactory.

Labor Is a Problem

The labor problem is a little more difficult and has two phases; one is a demand for increased wages to meet the rising cost of living, and the other is actual scarcity of workmen. The answer to the first problem has resulted in some cases in raises of wages. This has been necessary in order to obtain workmen; the amount seems to run from 10 to 15 per cent.

The second phase is still a problem, and as men in increasing numbers are called to military or industrial activities in connection with the successful prosecution of the war there will be a still greater shortage of men; even now it is felt quite seriously in spots where large activities in war work have begun. It seems quite likely that wherever airplane engines are manufactured in quantity many men will be drawn from the neighboring truck industries.

Old Reliable says that labor is high-priced. J. C. Wilson reports increases; Sanford calls the outlook good; the Master Truck Co., higher; Chicago Pneumatic Tool Co., higher, some trouble; Lippard-Stewart, not so bad; International Harvester Co., higher and harder to get.

It is difficult to forecast just how much the tightness of the labor market will affect production plants. Certain it is that some companies this year were unable to build as many trucks as desired because of lack of men, and secondarily, because of lack of material, which is partly due to shortage of men.

The dealer is being educated by the manufacturers in the best methods in marketing trucks. This usually takes the form of some sort of sales promotion department backed up by advertising and circular matter of various sorts.

The Vim company, Philadelphia, for example, has an assistant sales manager who is in entire chrage of sales promotion work. This company is carefully developing methods for educating the dealer and the salesman. Wherever possible a man is sent to the dealer to give him personal instruction. Methods have been developed for securing prospects and for learning transportation problems. This feature has been described at length elsewhere in this issue.

Helping the Dealer

As an example of what is being done to aid the dealer there is the case of the Denby Motor Truck Sales Co., Detroit, which recently inaugurated a plan whereby the sales manager goes out through the country and makes profitable contracts with farmers, contractors and even cities for hauling materials, then he returns to Detroit, where he advertises in the daily papers telling of the contracts he has, the money required, the profit to be obtained, and offers a complete contract with all the profits to anyone who purchases the Denby truck.

Sales efforts are being stimulated by contests for dealers and salesmen. Packard has a plan whereby the salesmen and the dealers are given certain quotas of trucks to sell, depending on the district, past record, etc. Money prizes are given to the salesmen by the dealers and other prizes to both dealers and salesmen by the Packard company.

Almost all truck makers have begun the publication of weekly or monthly papers dealing with the sales and handling of service trucks, and some, like Reo, are sending out a small magazine dealing with the profits to be secured in contract work in department store delivery by truck, etc. They are aids to dealers since they give them many new selling arguments and make them more familiar with both their product and the people with whom they are dealing.

Quick efficient service is a necessity and dealers are taking steps to realize on it. Factories are also aiding in educating dealers and mechanics and helping in other ways to increase efficiency. The Packard company, for example, has started a service school where dealers' salesmen may come to learn the mechanical construction of the Packard truck and how they can give the best service.

Therefore, looking back over all phases of the industrial development of the truck business for 1917, it is plain that it may be accurately summed up in two words: expansion and progress. There cannot be expansion without progress. The net result is that the future looks very bright for manufacturer, dealer and user. All should profit highly.

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More Economical Trucks for 1918

Biggest Problem Is Satisfactory Handling of Heavy Fuels Which Reduce Efficiency and Increase Wear—Solution Not Reached, Although Progress Has Been Made

TRUCK engineering for 1917 has had two definite objectives: First, lower operating costs; second, increased reliability. Developments of the year have been few and relatively unimportant, but what has been done presages important developments soon.

The biggest event of the year is the production of the war truck, but it is too early to determine what effect this will have on engineering progress in peace times.

The drive for increased economy includes: A study here and there of the problems which are necessarily linked with the increasing weight of fuel; the increasing use of large pneumatics on trucks of 2 tons and over; the slow but definite increase in popularity of starting lighting systems; rather unanimous opinion that the four-speed gearbox is desirable for trucks of more than 2 tons, or even 1-ton capacity; the almost universal use of pressed-on tires; and the increasing use of worm and internal gear drive, supplanting chain drive.

Economy First

The most important trends have to do with improving economy. There is little that remains to be done to increase reliability. In other words, this phase is practically satisfactory, but of course the time will never be reached when the same can be said about economy.

Regardless of how small the expense may be, it will always be desirable to lessen it. The fact should not be overlooked either that reliability is usually, if not always, closely connected with economy.

Under reliability, probably the most important feature is the increase Hotchkiss drive. The amidship location of the gearbox, particularly for larger models, is becoming more popular, shorter propeller shafts are used to prevent whipping and bodies are more frequently attached without drilling the frame members.

Considerable difficulty was experienced last year by users of trucks due to the heaviness of the fuel which approaches kerosene in characteristics, which collects in the crankcase of the engine diluting the engine oil and increasing wear.

Most careful operators found it necessary to change the crankcase oil at least once a week, so rapid was the accumulation of heavy fuel which condensed in the combustion chamber and worked its way past the pistons into the crankcase. On the average, about $2 worth of fresh oil is required each week and this is a big item. Furthermore, the dilution of the oil even during the week renders lubrication inefficient and more rapid wearing of parts occurs. It is estimated that with heavy fuel, the life of the engine is usually cut in half due to decrease in lubricating efficiency.

1917-1918 Developments

1—*Prevention of fuel condensation by the hot-spot manifold.*
2—*Modifications of the exhaust stove to eliminate fuel condensation.*
3—*Increasing use of large pneumatic tires.*
4—*Increasing popularity of electric starting and lighting even for large trucks.*
5—*The popularity of the four-speed gearbox for larger models.*
6—*Practically universal adoption of pressed tires.*
7—*Further intrenchment in favor of shaft drive.*
8—*Almost universal popularity of Hotchkiss drive.*
9—*Increasing use of amidship location of the gearbox.*
10—*Developments to overcome propeller shaft whipping.*

Another obvious difficulty which arises when the use of the heavy gasoline of to-day is attempted, particularly in cold weather, is that of efficient combustion. This is aside from any difficulty which may occur because of heavy liquid fuel making its way to the crankcase and interfering with lubrication. The fact that the heavy fuel will not vaporize as readily means that combustion is not so efficient, consequently it must take more fuel to develop a given amount of power.

It is plain that engineers have two problems ahead of them which are quite closely related, one is that of supplying a more perfect mixture and the other is that of keeping the heavy fuel out of the crankcase.

Few makers have done anything to cope with these evils beyond advising their users to change the engine oil more frequently in winter since the trouble is aggravated by cold weather. There has been little desire to change engine design or carbureter construction to handle the lower grade of fuel. Undoubtedly many manufacturers have not considered the problem at all and most of the others have done little other than talk about it. It is a very real problem, nevertheless, and it is expected that a large step in solving it will be made during the coming year. If the life of the engine is reduced 1/3 or ½ due to these bad influences and if fuel economy is cut down, it must not be denied that something must be done.

There is a tendency among some manufacturers to take the stand that carbureter manufacturers and fuel producers will in some way work the problem out between them. A satisfactory solution is being obtained by the production of a somewhat different fuel and the design of a carbureter which will handle it readily. Such a development will help, but it is not the whole solution, which depends on engine design, cooling and heating requirements, etc.

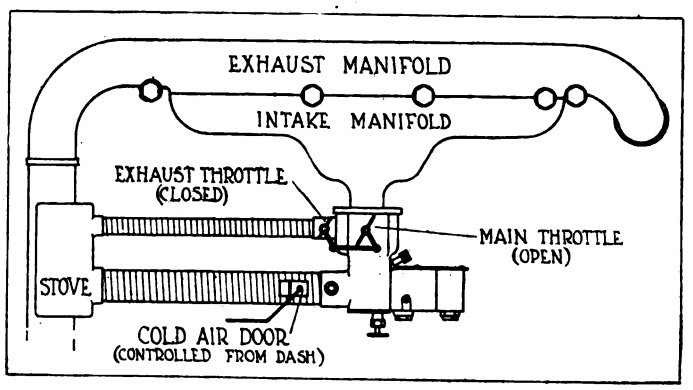
Heat Prevents Condensation

Heat added to the mixture is probably the present solution of the matter, although there is no settled opinion as to how this should be done. This much, however, is certain: A fuel must be as finely broken up as possible in the mixing chamber. Sufficient heat must be added to thoroughly vaporize the particles of liquid in the first place and more heat added so that there will be no danger of the liquid recondensing before it gets to the cylinder, or if it does recondense, heat must be furnished to revaporize it again.

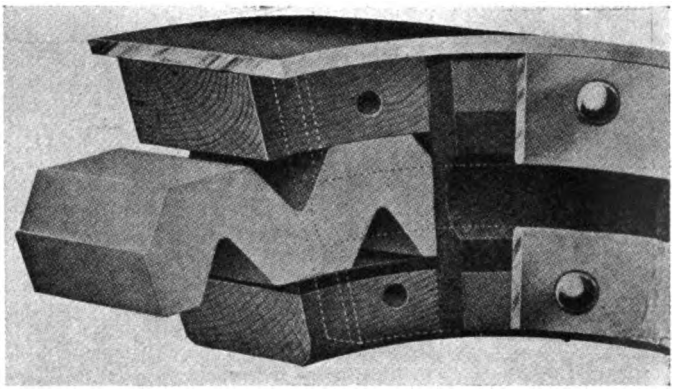
One of the best, if not the best solution seems to be that of the new army truck engine. The intake manifold is external but short, therefore does not offer much opportunity for the liquid to condense. From the carbureter, it rises up straight to a point well above the valve ports and the cylinder blocks, and at the top of the rise it touches the exhaust pipe and divides, the two branches sweeping downward quite clear of the exhaust manifold to each block of cylinders. About 3 in. of the intake passage is exposed to the exhaust manifold top.

The advantage of this design is that the heating element affects practically only the liquid fuel and does not have much effect on the fuel already vaporized. Naturally, the liquid fuel is heavier than the vapor and as the mixture rushes up the manifold at a high rate of speed and

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This diagram shows how condensation is prevented on the Nash truck. The mixture is heated through an exhaust stove. In addition the carbureter is jacketed with exhaust gas, the flow of heat being shut off as the throttle is opened



Sewell cushion wheel—Since it is shod with a solid tire and in addition has a corrugated cushioning ring it is more resilient than a regular solid. The design is such that the ring is entirely enclosed

turns to the right or left, the heavier liquid particles are thrown straight against the hot spot, where they are boiled off into vapor. Thus although the total amount of heat supplied to the incoming charge is small, vaporization is good, since pains have been taken to supply the heat exactly where it is needed.

Why Exhaust Stove Won't Do

The natural question is why is not the ordinary exhaust stove as now used sufficient for the purpose. Why should it be necessary to use a hot spot or some other special means for heating the fuel? The answer is that an exhaust stove in itself is not enough if the intake manifold is long or exposed because the air is chilled by the vaporization of the gasoline to such a point that some of the mixture will be in liquid form and unless heat is applied between the carbureter and the engine, this fuel will pass into the engine as liquid. The waterjacketed manifold or a manifold integral with the engine is not sufficient, although it helps. The mixture is still further chilled as it passes the throttle valve and the more the valve is closed, the greater the drop in temperature, since a fall in pressure is always accompanied by a proportionate decrease in temperature.

Therefore, the greatest amount of heat is needed when the least amount of heat is being produced, namely, when the throttle is closed or nearly so. If sufficient heat is applied to the intake manifold to prevent this condensation, on closed throttle, the mixture will be heated entirely too much as the throttle is opened, and likewise, if the exhaust stove has sufficient capacity for closed throttle heating, as the throttle is opened, the exhaust pipe grows hotter and the air is heated more than required, thus reducing the weight of air which is drawn into the cylinders inasmuch as the warmer the air is, the lighter it is, therefore power is reduced.

If an exhaust stove is to be used satisfactorily, some additional control is necessary so that too much heat will not be supplied as the throttle is opened, at the same time assuring enough for closed throttle conditions. An interesting solution following these lines is that worked out by the Nash company for its trucks. Here the main air intake is from a hot air stove on the exhaust pipe, a shutter in the pipe allowing cold air to be admitted as required so that the air temperatures in the carbureter may be kept uniform, regardless of other conditions. It is adjusted by hand. When the engine has warmed up, it may be left alone all day, as a rule.

In addition, there is a hot air jacket on the carbureter. The flow of exhaust gases through the jacket, however, is regulated by a butterfly valve which is interconnected with the throttle valve so that as the throttle is opened, this valve is closed, therefore, with main throttle fully opened, the minimum heat is supplied, and with main throttle fully closed, maximum heat is supplied, which is exactly what is required.

Tests have shown that most of the condensation takes place while the engine is warming up, and since in both the processes described exhaust heat is used for solving the difficulty and since the exhaust pipe is the first part of the engine to become warm, it is natural that the condensation usually caused in starting is minimized.

Thermostatic Control Aids Economy

Thermostatic control of the temperature of the cooling water also aids in thorough vaporization of the fuel, although it cannot be considered as a substitute for either of the solutions that have just been described as a means to prevent condensation. Thermostatic control as practised by the Packard company on all its models insures the heating of the cylinder walls in minimum time, thus aiding in the prevention of condensation, and since the thermostatic device also maintains a uniformly efficient cooling temperature, when the engine is heated, fuel economy is fostered.

In the Packard system the flow of water through the waterjacket is short-circuited on itself, the radiator being cut out entirely, thus there is only a small amount of water to heat. Most of it is in the waterjackets themselves and consequently the water must become warm in a minimum time. When the temperature rises above a certain point, however, say 180 deg. Fahr., the thermostat begins to allow some of the water to flow through the radiator so that the temperature never rises above this point.

The use of a thermostatically controlled radiator shutter for throttling the amount of air passing through the radiator also has its advantages. In this construction, it is necessary, of course, to heat all the water in the radiator, and, therefore, the cylinder jackets do not become warm quite so soon. It has the advantage that it is not absolutely necessary to employ an anti-freezing liquid, inasmuch as all the water is warmed at the same time. This is not so with the other system and hence it is absolutely essential to have an anti-freezing liquid in cold weather, whether the engine is running or not. It might happen if the engine were running very slowly that circulation would be slow or possibly stopped entirely through the radiator, that freezing would take place.

Combination of Both Would Pay

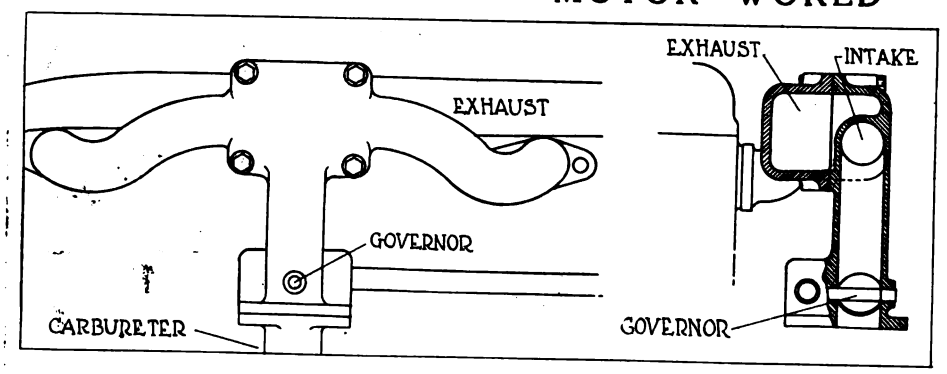
The radiator shutter keeps the whole cooling system warm inasmuch as it closes the front of the radiator practically as soon as the engine is stopped, or rather as soon as the water temperature drops below a certain amount.

Undoubtedly, the ideal system would be a combination of both water and air control. Automatic restriction of the water circulation would give the quick warm-up desired and the air shutter with either automatic or hand control would eliminate the need for much anti-freeze liquid. The idea may sound complicated, but it need not be, and anyhow heavy fuel is going to force the production of some device to counteract its effect.

It has been suggested more than once that a very simple way of handling the difficulty would be to take a radiator with two or three compartments so that one or more could be cut off and drained for winter work. Of course, such a radiator would cost more than the plain type, but the control of cooling has got to cost more.

It should hardly be necessary to explain that the presence of the condensate in the cylinders has two effects. It cuts the lubricant on the cylinder walls, thus increasing the wear between cylinder and piston, and second, it thins the lubricating oil in the crankcase, thus increasing the wear on all lubricated surfaces. The amount of fuel which gets into the crankcase may be limited to some extent by putting another ring on top of the piston and increasing its length, but this is a makeshift, although at the present

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Hot-spot manifold on U. S. A. truck to prevent condensation of fuel. The liquid particles, when they reach the top of the vertical passage, do not swing to the left or right with the gas, but go straight, since they are heavier, until they strike the hot spot obtained by exposing the exhaust pipe

time a very desirable one. It does not get to the seat of the throttle which is to eliminate the condensate.

It is impossible to regard any of the heavy fuel handling systems as final. None of them are capable of taking care of kerosene efficiently, though they have limitations. They will handle present day commercial gasoline well, but no one can foretell what kind of fuel will be available a year from now.

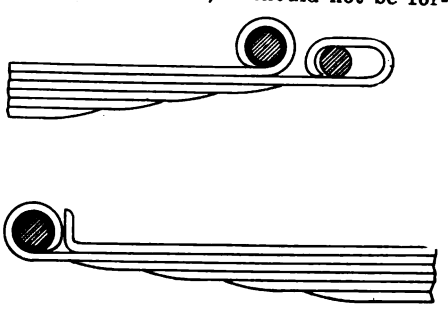
Many truck engineers admit that they are planning engines for still heavier fuels than used at present and that the proper handling of heavy fuels involves changes in engine design. Two or three engineers who are authorities in their work freely admit that it would be expensive to use kerosene with present-day engines. They argue that the life of truck engines must be increased and that already too many truck engines are too expensive. Their maintenance is too great and that attempting to use heavier fuels with these engines would add to their maintenance cost, which would not be warranted.

Engine Changes Needed

To handle heavier fuels calls for fundamental changes in engine design. The combustion chamber must be perhaps changed in design in many cases and have what are known as hot spots removed. These hot spots might not cause pre-ignition with highly volatile fuels, but would with the heavier fuels. Increased water circulation over the cylinder heads and around the valves is necessary. Increased water circulation around the spark plugs would be essential.

Different piston construction whereby the heat could more rapidly be drawn from the piston head might be needed. These are but a few of the many points mentioned by engineers which must enter into cylinder design in order to effectively use heavier fuels. When these changes have been made there will be many changes in manifolds, many in carbureters to make them more efficient with heavier fuels, and undoubtedly different forms of thermostatic regulation of water temperatures and thermostatic control of air current through radiators will be used. When these have all been brought together in some efficient way unquestionably truck efficiency will have been wonderfully increased and truck operation greatly improved.

Pneumatic tires are becoming slightly more popular for the heavy trucks, although there does not seem to be anyone who is unreservedly sold on the idea. These tires are more expensive than solids and it is doubtful whether they make enough difference in the repair bill to warrant the increased cost, provided the operating speed remains the same, but the point is that pneumatic tires allow faster operation without any increase in wear and tear or fuel expense and this may more than compensate for the greater cost. Also, it should not be forgotten that although pneumatic tires are more expensive to-day, in increasing use they may become cheaper.



Two designs to prevent the unwrapping of the spring eye under violent shock

There are still some small problems which remain to be solved, such as the best method of carrying a spare tire and provisions for inflation. If 150 lbs. pressure is not abnormal for large tires, ordinary garage equipment will not do. The Kellogg company is supplying specially designed motor-driven tire pumps capable of giving 150 lb. pressure for some government trucks equipped with large tires.

It is thought that on trucks running over a definite route, it is not necessary to carry a spare inasmuch as the tires are so large as to be practically puncture-proof and when a blow-up occurs, the tire is discarded anyhow, so that in this case, it is all right to drive home on a flat tire.

As regards solid tires, the big single is being tried out extensively in competition with the dual. The former is more economical from a tire wear standpoint, but it is claimed that its rolling resistance exceeds that of the dual on the hard road. The difference cannot be very great, however, and miles per dollar of tire is likely to be the deciding factor.

The solid pressed-on tire is slowly but surely pushing the demountable into the discard, depending upon the distribution of presses throughout the country. The pressed-on tire is lighter and better, provided a press is available for making a change.

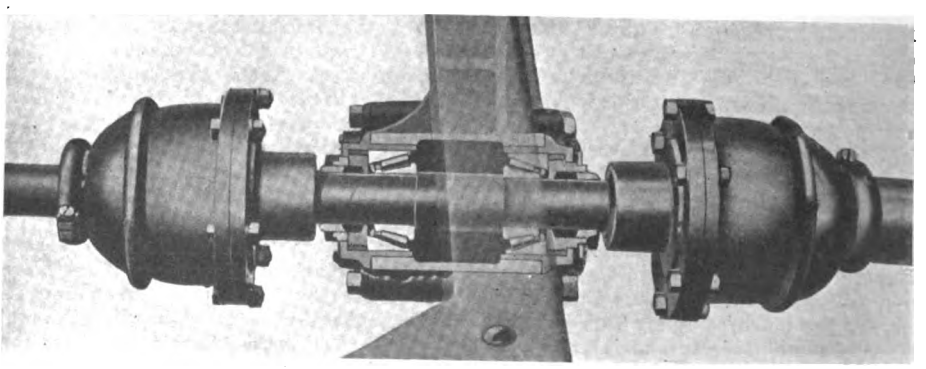
There has not been as much development in starting and lighting equipment as expected, neither is there any definite tendency to abandon the magneto in favor of the battery system, although if starting and lighting systems do become popular, there is no question but that battery ignition will take the place of magneto ignition to a considerable extent the same as on passenger cars.

Advantages of Starters

Where frequent stops and starts are made, there seems no question but that the fitting of a starting and lighting system is an economy. The starting system is, to say the least, and since it calls for a generator and storage battery, the added complication of electric bulbs and wiring cannot be called objectionable, even though the truck is rarely used at night. The installation of an electric starter makes it possible for the driver to shut off the engine every time he leaves the truck, and yet start it without any effort. Gasoline is saved and the life of the engine is conserved.

These two factors probably more than compensate for the increased cost of the apparatus and its upkeep. This fact is becoming more generally recognized and consequently the starter must increase in popularity accordingly.

Passenger car starting and lighting equipment is not suitable for trucks. The starting motor inasmuch as it may be used 100 or 200 times a day, as compared to a high average of five on a pas-



Support for long drive shaft preventing whipping

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senger car, must wear out just that much more quickly, unless the wearing parts are made extra large, and this is what should be done. Engine speeds and condition of drive and voltage regulation are different on a truck than on a passenger car, and consequently changes in generator design are necessary.

Vibration has caused a lot of trouble with batteries, particularly on solid tire equipped vehicles, but the solution seems to be to mount the battery rigidly. Where it is provided with cushioning springs it shakes itself to pieces, but when mounted rigidly it stands up well. The wiring equipment as used on passenger cars is not satisfactory inasmuch as heavier wires and terminals are desirable because of increased vibration and generally rougher operating conditions.

The four-speed gearbox is increasing in popularity even for models as low in capacity as 1 or 2 tons. It permits a smaller motor, which means a greater fuel economy, or with the same sized motor it allows greater speed or hill-climbing. If the same top gear ratio is used, first speed is low enough for any emergency.

Four-Speed Advantages

A four-speed gearbox costs about 10 per cent more than the three-speed design, but the advantages are considered by many to be so great that the increased cost should hardly be considered.

Likewise, the amidship location of the gearbox is increasing in popularity for two reasons. First, it permits better accessibility of the clutch, and this is important inasmuch as the clutch on a truck gets much more use and therefore requires much more attention than on a passenger car. In the second place, the amidships location of the gearbox breaks up the length of the driveshaft so that no section of it is over 60 in. and therefore whipping troubles are eliminated. It is only when a shaft exceeds 60 in. or more that there is any great difficulty, provided the design is properly worked out.

Worm and internal gear drive are taking the place of chains. Internal gear is being used more than formerly for larger installations, although worm drive still has the lead. The advantages claimed for shaft drive over chain is that it is quieter, easier to maintain and more economical of upkeep.

Hotchkiss drive in which both torque and driving strains are taken through the springs is increasing. It is simpler than all other types and there seem to be no disadvantages to it provided the problems are thoroughly understood. It is necessary to have the half spring leaf larger than usual and to have it practically flat when the truck is loaded, so that the stress will be transmitted in practically a straight line. Special means must be taken to hold the spring to the axle so that there will be no danger of shifting the spring seats in backing the truck into a sandpile, for example.

Various methods are used for transmitting the stress of the springs to the frame so that a sudden violent stop will not unrock the spring eye. Various devices have been suggested to counteract this tendency, although instances of spring eye failure are hard to find.

Taking Driving Strain

One of the plans is to carry on the second leaf and to make on its front end a second eye of elongated form. Another is to have a leaf above the top leaf which is bent up at the ends and brought to bear upon the back of the eye. Both methods are quite successful, but the plain spring seems to do equally well if it is made of the proper material and seated in the right way.

The brakes must be laid out so that the eyes of the lever on the axle to which the two large yokes are attached come up into line with the top leaf of the spring.

Bringing the lever ends on the axle in line with the top leaf of the springs allows the axle to rotate a little, twisting the springs without causing a fore and aft movement of the levers which might set the brake. Choosing the proper place for the equalizer connections prevents the brakes being bent by changes in truck camber due to load or road shocks.

There are two main advantages in Hotchkiss drive. It is more yielding than a rigid drive, cushioning the shocks on the gears to some extent and saves a little weight and a little cost. Also it does away with joints that would need lubrication. Its drawback is the need for a slightly heavier top leaf on the spring—perhaps on both the top and second leaves.

Spring Stock Better

Spring material, generally, is getting better. A spring maker will supply several different grades of steel ranging in price from $1 to $3. There will be no difference in the action of the spring whether it is made of the lowest grade or of the highest, but the better the material the longer the spring will last and the less likely it will be to weaken or break. Manufacturers of trucks are finding it pays to buy good steel, and some whose limit a couple of years ago would have been, say, 6 cents a pound are now cheerfully buying a grade which would have cost twice that sum had steel prices remained at their former level.

The action of a spring, that is, the softness, depends mainly on the quantity of steel in it. Two springs of equal strength can be made from a few thick leaves or many thinner ones; the latter will be the heavier spring, but it will be better acting and will last longer. For this reason there is a slight trend toward more and thinner leaves, and there is no doubt that money expended on springs gives very direct returns. They are one of the parts of the truck which should be the last to economize upon.

To minimize the breakage of frames, there is a strong tendency toward mounting bodies without drilling the frames. Particularly is this true on the larger models. Every hole drilled in a frame, no matter how small or where placed, offers the possibility of a crack developing. However, the position of the hole influences the matter. It does least harm in the vertical section. It does practically no harm in the center of the vertical section of the frame, inasmuch as there is no stress at this point. It does more harm if placed in the top flange and most harm in the bottom flange, since the latter is under tension instead of compression. Some makers get around these difficulties by using U bolts which pass right around the frame, and there are other methods. One manufacturer claims that as long as holes must be drilled it is better to use a few large rivets than several small ones, even though the section be the same in both cases.

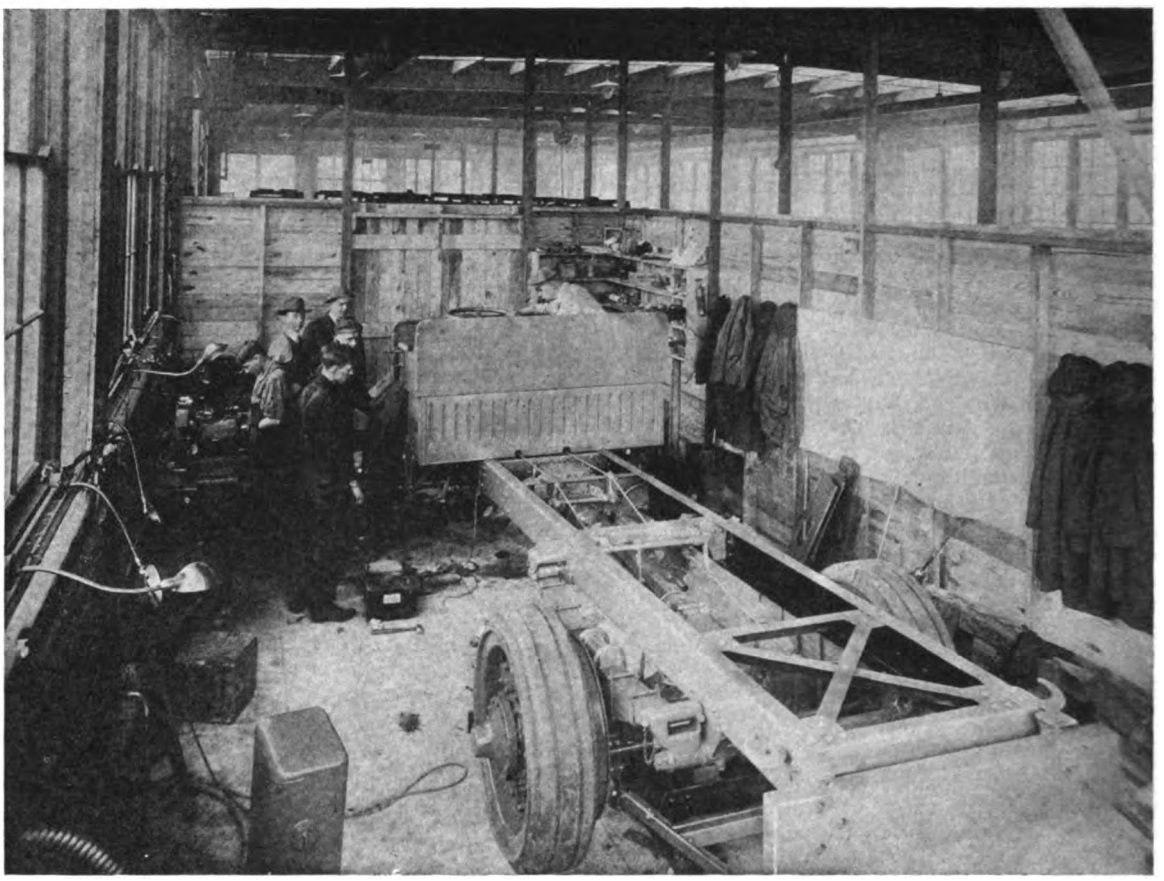
Making the side member of the frame straight, from end to end, is popular with many manufacturers. The narrow front is attained by a gradual taper from the rear, and in many factories the fact that the bottom flange of the side member is straight from end to end is referred to with great emphasis. A novel feature in design to accomplish this is used by the Nash, in which instead of tapering the front of the frame as is usual by carrying the top flange straight, the taper is accomplished by keeping the bottom flange straight and sloping the top down gradually to the spring horn. This gives the shortest horn, reducing the weight of materials.

Engine Support Give Trouble

Closely associated with the frame is the problem of engine supports. There have been many broken motor legs due to the twisting of the frame side members, in spite of three-point suspension. One maker offers a solution consisting of separate frame cross members, one at the front and one at the rear, the engine being mounted on these on a three-point system, two rigid mountings in the rear and one in the front. The cross members are intended to absorb many of the twisting strains which the frame has to bear.

A different shock-reducing device which has a great vogue in certain districts is the Sewell cushion wheel. In this the actual wheel is smaller in diameter than usual and is surrounded either by a ring of hollow rubber roller or by a thick band of deeply corrugated rubber. Over this fits the rim of the conventional solid tire and the outer rim of the felloe band of the wheel is connected by rubber rings which are held in place by steel rings and bolts, inclosing the cushion member completely. Of course, the resiliency is not so great as that of the pneumatic, but it is considerably greater than that of the plain solid tire. Other manufacturers use an engine sub-frame. Where three-point suspension is used, various methods of support are adopted. Some attach the leg to the frame through a ball and socket connection. An example of this is the Diamond T. Here the bolt anchoring the motor legs with the frame is placed horizontally. Nash uses a three-point support in which the front end is not a trunnion but a fixed point. There is an increased tendency to use forged cross members to carry the engine.

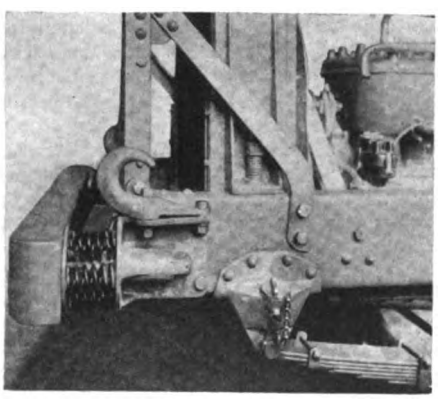
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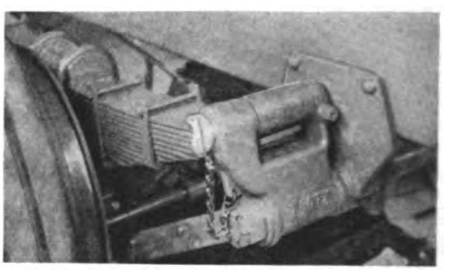
Enclosed corner of the factory, where the U. S. truck was built, showing some of the men who worked on it. The chassis is strongly cross-braced, the rear is provided with a wooden bumper backed by coil springs, and rolling down hill is prevented by a sprag which is partly visible at the rear of the axle

U. S. A. TRUCK

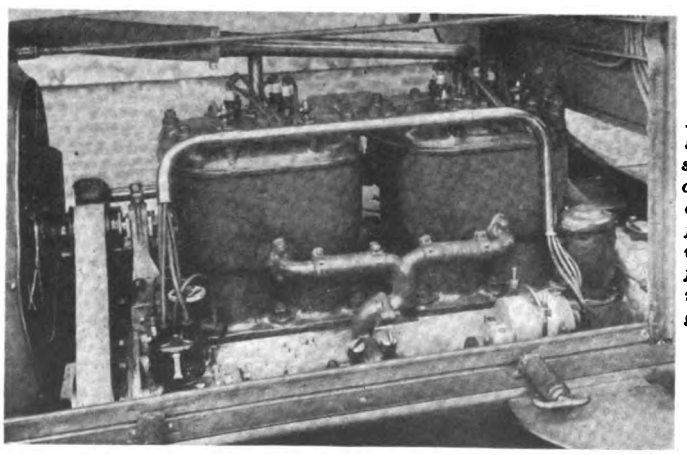
Some Prominent Details



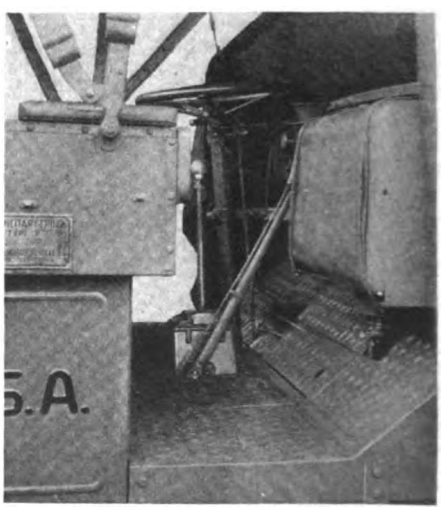
Wooden bumper, spring backed, spring mounted radiator, substantial radiator guard and oil reservoir for spring bolt lubrication are the features



Shackle containing oil reservoir and wick lubricator. A filling once in six months is enough, it is said



Left side of engine showing location of spark plugs, detachable cylinder heads, fan belt adjustment, big oil filler at rear, battery ignition system at front and magneto at rear. The only two grease cups are seen on the pump

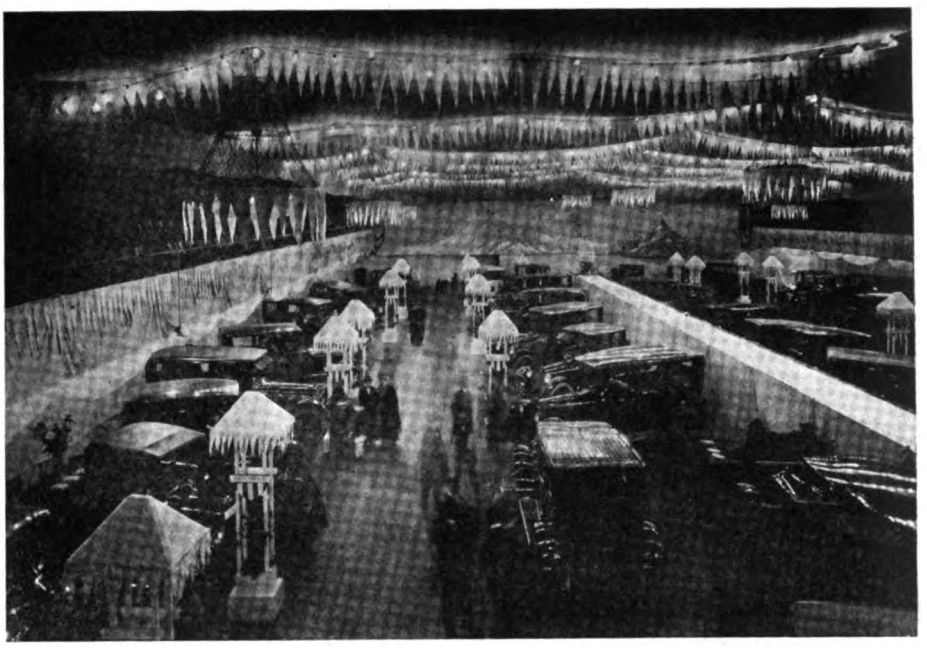


Driver's compartment, showing the usual control levers. The gasoline tank is conveniently situated here, and it will be noted that fuel may be shut off without the driver leaving his seat

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Syracuse Shows Cars in Arctic Scene

Enclosed Types Win Attention and All the Dealers Like Results



There was a fashion show also at the Syracuse enclosed car show, and it brought many to view the cars. The wintry scenery emphasized the comfort of the limousines and sedans

SYRACUSE, Oct. 27—Though actual sales have been few, the first annual enclosed car show of the Syracuse Automobile Dealers' Association, which closes here to-night, has been an unqualified success.

A poll of the directors of the association and the other exhibitors to-day shows that without exception every dealer is in favor of making this exposition a permanent feature. Manager Harry T. Gardner is in receipt of requests from dealers who were unable to display because of delay in shipment of cars, asking for a reservation of space for another year.

The attendance, though not nearly as large as has been recorded for the regular show, has been sufficiently large to return an ever so slight margin of profit to the association, it was announced.

Everywhere there is a feeling among the dealers that this exposition has in no way detracted from the larger show that will be held here in February.

Because this exhibition has brought to the attention of thousands the advantages of winter driving in an enclosed car, the dealers feel their efforts have been rewarded.

Few Sales Made

In speaking freely of the sales situation some have said that dozens of cars were sold. This is known positively to be untrue. Comparatively few actual sales have been made. There is not, however, a single dealer who has not closed at least one deal or who is not reasonably sure of a signed contract within the next few days as a result of this selling effort.

The Syracuse show was staged under most adverse conditions. The Liberty Loan campaign, which has been prosecuted vigorously here, has taken away the attention of many who would be callers and live prospects. Weather conditions, though advantageous for the demonstration of closed car comforts, kept many away from the Armory, where the exposition was staged.

The thousands who did come, however, were interested observers. As John W. Lee, president of the association, put it, every man of more than moderate means is a prospect for a closed car, but 90 per cent of those who have been seen at the Armory are considered live prospects for an early purchase.

A great many women were drawn to the show by a special feature instituted under the direction of Manager Gardner. A fashion show—not just a display of apparel suitable to motoring, but a comprehensive display of the newest modes in women's garb—was staged by one of the local department stores.

A runway was built from the balcony, which encircles the drill hall, through the center of the hall to within a few feet of the rear wall. At its lowest point the runway was about 8 ft. from the floor and was graded slightly toward the entrance.

Professional models paraded up and down this runway for an hour each afternoon and evening, giving a continuous display of all sorts of high-grade wearing apparel.

Fashion Show Helped

It was this fashion display that drew many of the most interested observers to the cars, according to Gardner. It was decided to stage this feature because it was felt that possibly the public would not respond to just the automobile show quite as generously as they do to the regular midwinter affair.

"This way we provide something that surely will appeal to every woman in town," Gardner said. "Of course, every woman who is interested in automobiles is interested in fine clothes, but perhaps her interest in clothes is a bit more pointed.

"The extreme beauty of the motor vehicles, however, proves such a lure that once they are in the Armory the cars get first consideration, and the fashion show second. Not a few of the best prospects and several of the largest sales were registered despite the fact that the prospect and buyer came in primarily to see the fashion show."

In discussing the advisability of making the closed car show a permanent feature, John W. Lee, Jr., president of the Overland-Syracuse Company, and head of the association, said:

"If the proposition were to be put to a vote now, I would be much more strongly in favor of this show than I was when we entered into the scheme originally.

"At first there was some feeling among the dealers that this show could not be a success—not enough people would come—the market is too limited, and all that sort of thing. In some things I agreed, but now I insist that unless some unforeseen circumstance prevents we will make this show even bigger another year."

Simon Silverman, vice-president of the Syracuse Motor Car Company, and vice-president of the dealers' association, was even stronger in his praise of the show.

"Even though the association had lost money on this proposition and we had not made a sale, I should say this effort has been entirely worth while, and I am glad the association went into this thing as elaborately as it has.

"For years the Eastern cities, such as Syracuse, have been backward in the adoption of the closed car. It is the coming thing and the educational value of this exposition has been so great that we cannot miss the opportunity to make an even stronger play on it another year."

Essentially the same sentiments were expressed by most of the other dealers. The two men quoted represent what might be termed medium-priced lines.

G. A. Fonda, sales manager for the Stowell Motor Car Company, which sells Packards and Hudson cars, said:

"There is something in the air at a show of this sort that adds to the splen-

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dor of even the finest closed car. Of course, there are many visitors who are not in the market for a high-priced car, but during the week we have found a surprisingly large number of prospective purchasers who have come up from the lower priced car fields and now seek the delights of the high-grade, luxuriously finished car for all-year use."

There were no freak models to catch the eye, and without exception the cars shown were bought by the dealers for sale here. Stripped chassis were taboo, and there was none of the lecturing that marks the usual show. Technical experts from the factory were not in evidence, and the principal sales effort was spent, not so much in telling of power and wheelbase, but rather in a discussion of the various body types, their exterior finish and interior comforts.

One feature was the new eight-cylinder Willys-Knight, seven-passenger touring sedan. The model shown here is the second shipped from the factory. The other has been sent to New York, according to Mr. Lee, Syracuse representative.

Only one accessory house was admitted to the show, and this firm, a local institution, exhibited garage heating systems. Because of a lack of room, the usual run of accessory displays was not admitted, but because of the timeliness of this heater proposition room was made for it in the hall leading to the main exposition.

The annual dealers' show requires all the space in the two large drill halls of the State Armory, and in recent years there has been a desire for even greater space. For this occasion, however, only one drill hall was used. Many of the dealers who have been in the front line of the annual show were forced to stay away from this proposition because their factories were unable to ship display models in time.

Despite this difficulty in getting shipments very nearly every type of closed car was on display. The list included the conventional sedan, coupé and limousine, the brougham, town car, landau, touring limousine, and the several convertible types.

There is a growing opinion among the exhibitors that the giving of trade tickets in large quantities to customers and prospects should be done away with. It surely was overdone at the Worcester show. Many of the men are of the opinion that in cities of the size of Worcester the show should open about one o'clock in the afternoon.

The unsettled conditions due to the war have furnished a big problem to the retailer. The show was anticipated with much interest as a means to give reliable predictions as to the immediate future of the business. A canvass of the show shows a falling off from previous shows in both attendance and sales. Car sales during the Liberty Bond drive week would have been almost nothing. The effect of the show kept this about normal.

The majority of the dealers are very optimistic that business will continue to an extent which will enable most of them to get by, but they are planning on a very much reduced volume. As one dealer expressed it: "If a man does not expect to sell cars he probably won't, but if he does expect to sell cars and starts in with that in mind and works harder than he has in the past he will still be doing business."

Worcester Show in Several Spots

City Has No Good Building, So Staged Exhibits in Hotel Lobbies and Any Other Available Spaces

WORCESTER, Oct. 27—Worcester has just held its annual motor car show. An automobile show cannot be made much of a counter attraction when Uncle Sam is making a Liberty Bond drive. Realizing this fact, and not desiring to prove it, the Worcester Automobile Dealers' Association with its managers, Harry W. Stacy and Fred W. Dart, early determined to make the best of the situation and, by means of a patriotic turn to the show, aid the local campaign committee in pushing the sale of Liberty Bonds.

The date for this ninth annual show was selected two months in advance for the week of October 22, the earliest that the show has ever been held. The association has previously held shows in February and November with good success. The sentiment of the dealers called for an early show when the models were new and there was an assurance of sufficient good weather afterwards in which to take care of the necessary demonstrating for the show prospects. Unfortunately the Liberty Bond drive interfered so that no test of the real value of the early date was obtained.

The decorative scheme was entirely patriotic, hundreds of flags being used. Even the large fountain in the grand ball room of the Bancroft Hotel flashed red, white and blue.

The main exhibition hall of the Casino housed 46 cars, while the Bancroft held 24; 28 dealers exhibited 32 makes of car. While it was not intended to be an enclosed car show, nearly 50 per cent of the models shown were of this type, and more than 50 per cent of the actual sales and prospects obtained were for enclosed cars.

A new feature in advertising the show was the sending out of about 2000 special invitations by the association. Lists were obtained from each dealer of his car owners in towns not adjacent to Worcester and the state registration lists were used for the owners of other makes of cars, the idea being to reach people who ordinarily would not come to the show and who would also attend with a party of their friends. Under normal conditions and with good weather there is no question of the success of the plan.

Has No Good Building

Worcester is handicapped by not having a suitable auditorium or hall large enough for a large show. Because of this handicap the dealers did not attempt any elaborate lay-out in handling their space, although several of them purchased extra space to avoid too much crowding.

Only one chassis and one special cutaway motor in motion were exhibited. No accessories were shown. Sedans proved to be the prevailing type among the enclosed cars. The Liberty Bond booth had a 12-foot semi-working model of the latest American submarine for a background.

During the show a Liberty Bond parade was held by the dealers, advertising the fact that each dealer would buy a $100 bond for every sale made at the show. The trade is practically unanimous in the opinion that automobile parades are not of much value in show advertising.

Denver Show for Business Only

DENVER, Oct. 28—The Denver association show committee has gone on record as barring everything of a freak nature in the motor car and accessory divisions during the show, Nov. 12 to 18. Only standard cars of different styles will be shown. The following companies will show from one to six models:

Willys-Overland Co., Overland; MacFarland Norton Co., Buick; Cadillac Motor Co., Cadillac; Tom Botterill, Inc., Pierce, Hudson, Dodge; W. W. Barnett, Oldsmobile; E. J. Johnson, Premier, Chalmers; Mountain Motors Co., Packard; G. W. Linger, Mitchell; Platt Fawcett Motor Co., Paige; F. C. Cullen, Cole, Franklin, Studebaker; Roberts Automobile Co., Marmon; Carter Motor Co., King, Saxon, Liberty; Exchange Motor Co., Chevrolet, Dort, Grant; Miller Ray Motor Co., Kissel, Maxwell; Apperson Motor Company, Apperson; Ford Motor Co., Ford; J. S. Morrison Auto Co., Oakland; Dan. B. Southard, Locomobile-Mercer; A. T. Wilson Auto Co., Standard; H. H. Heiser Co., Velie; Merrick Motor Co., Marion-Handley, Crow-Elkhart; L. E. Kelton Motor Co., Haines; H. J. Hannon, Scripps-Booth; Colorado Motor Co., Reo; Mulnix Auto Sales Co., Monroe; Geo. H. Estabrook, Hollier, Briscoe; Moore Hardy Company, Stephen; National Motor Co., National; Lexington Auto Co., Lexington; Maxwell Chamberlain Co., Peerless; J. L. Armstrong, Winton; Jackson Motors Co., Jackson; I. B. Humphreys, F.I.A.T.; Detroit Electric Co., Detroit Electric; S. B. I. Motor Sales, Hupmobile; White Automobile Co., White; Ross Motor Company, Yale, Colonial.

Fifty-one different makes of motor cars, 116 cars in all, every style of motor car will be shown, with the favor being shown to the enclosed type. Several limousines and town cars, special jobs costing $10,000, will be the features of the enclosed car class.

A resolution passed by the Automobile Trades Association show committee has been put into effect, i,e., no distribution of advertising novelties, no smoking, no brass bands, no coat or wraps to be left in exhibit booths, no carnival features, the entire show to be conducted in a refined and business-like manner for business only.

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1918 Tractor Tests to Be Farther East

To Be Held in Ohio or Michigan and to Be Made More Practical Than Fremont's

CHICAGO, Oct. 27—There will be a national tractor demonstration in 1918 and the test will combine fuel consumption, tractive efficiency, belt work, and other questions of tractor efficiency, none of which entered into the demonstrations held the past year at Fremont, Neb. This decision to hold real tests was decided upon at a meeting of the national tractor demonstration committee, which is a committee of the Implement and Vehicle Association, the organization that supervised demonstrations this year. These new recommendations come as a natural result of the tests in August, which furnished scarcely any tangible information of value to buyers and others concerning tractor performances.

According to the opinion of the committee, the 1918 tests will include the following:

1—Tests on fuel in plowing and performing other kinds of farm work.

2—Tests of different types of traction wheels, wheel equipment, and tractive efficiency, to include tests running wheels in furroughs, on unplowed ground, and also on plowed ground. This will furnish information as to the relative merits of tractors with different numbers of wheels.

3—Tests on steering mechanisms.

4—Tests of tractors doing belt work.

In addition to these specific tests the committee decided that each tractor should give one continuous 10-hour demonstration. Last August tractors were demonstrated about as makers saw fit, and as there was no endurance test, such as a 10-hour test would prove, there was no opportunity of getting a definite line on the relative value to the tractors.

The location of the demonstrations for 1918 has not been determined upon, but the committee favors some point in the vicinity of Detroit or Cleveland, providing 3000 to 5000 acres of land can be secured. This apparently bears out the idea that Fremont is not well located as a demonstrating ground from the manufacturers' viewpoint, and further that these demonstrations are really for manufacturers rather than buyers.

$15,000,000 Issue by Goodrich

NEW YORK, Oct. 26—In order to take up its outstanding indebtedness, the B. F. Goodrich Co. will issue $15,000,000 of 6 per cent notes to cover a period of 2 years. The issue will be in serial form and will facilitate the carrying of unusually large inventories of raw materials made necessary by the war. There will be no public offering of the notes.

The company is earning more during the present half of the year than it did in the first 6 months of 1917. Net earnings in the first half of the year amounted to $5,200,000. Net earnings for the whole year are expected to reach $10,500,000. The war tax will cost the company somewhere between $1,000,000 and $1,500,000. Using the $1,500,000 figure, would leave $9,000,000 net for the full year. Sales in the current year are running at an annual rate of better than $85,000,000, as compared with $70,990,782 in 1916 and $55,416,866 in 1915.

Diamond T Appoints New Men

CHICAGO, Oct. 27—The Diamond T Motor Car Co. at its annual sales conference appointed the following district representatives:

Frank S. Hyman, formerly with the Packard Motor Car Co., will assist dealers in Michigan, Ohio and Kentucky; headquarters in Cleveland. E. E. Strickland, formerly manager of the Kansas City branch of the U. S. Tire Co., will cover Kansas, Oklahoma, New Mexico and Texas; headquarters in Kansas City. Louis E. Wagner, formerly with Baker Motor Vehicle Co., will be general representative for the territory including North Carolina, South Carolina, Florida, Georgia, Mississippi, Alabama, Louisiana and Tennessee; headquarters in Atlanta. R. A. Breeden, formerly general representative for the Diamond T, will devote his exclusive attention to Northern Illinois, Wisconsin, Minnesota, Iowa, North Dakota, South Dakota, Colorado and Nebraska. He will make his headquarters in Minneapolis. Joseph S. Conroy will continue to act as district manager for the Chicago territory.

New Overland Prices

TOLEDO, Oct. 27—The new schedule of Willys-Overland prices, effective Nov. 1, is as follows:

Model	Old Price	New Price
90 Touring	$750	$795
90 Roadster	735	780
Country Club	795	840
90 Sedan	1,195	1,240
85-4 Touring	895	930
85-4 Roadster	860	915
85-4 Coupe	...	1,285
85-4 Sedan	...	1,485
85-4 Chassis	...	845
85-6 Touring	1,095	1,130
85-6 Roadster	1,080	1,115
85-6 Coupe	1,385	1,420
85-6 Sedan	1,585	1,620
85-6 Chassis	...	1,045
Willys Six:		
89 Touring	1,295	1,365
89 Club Six	1,295	1,365
89 Sedan	1,975	2,045
89-6 Chassis	...	1,245
Willys-Knight:		
88-4 Touring	1,450	1,525
88-4 Coupe	...	2,175
88-4 Sedan	..	2,225
88-4 Chassis	...	1,875
88-8 Touring	1,950	2,000
88-8 Sedan	2,680	2,700
88-8 Limousine	2,750	2,800
88-8 Town Car	2,750	2,800
88-8 Varsity	...	2,550
88-8 Chassis	...	1,850
800-lb. Delivery:		
90 Panel Delivery	785	810
90 Express	760	785
90-D Chassis	720	745
1,200-lb. Delivery:		
Express	905	930
Chassis	855	880
Government Chassis	...	940

Use of Open Cars for Car Shipping Barred

Government Says Coal Must Be Moved—Neither Can Other Trades Use Coal Cars

NEW YORK, Oct. 29—Beginning Nov. 1, passenger cars cannot be shipped in open top railroad cars such as coal cars and gondola cars. This order has been issued by R. S. Lovett, Priority Director of the War Industries Board, and has been made in order to increase the shipment of coal throughout the country as necessary. It was found, for example, that coal production has been restricted due to shortage of cars. One large automobile concern has been shipping 60 per cent of its automobiles in coal cars. Other coal cars have been used for shipment of road-building material, the State of Ohio alone having 6000 carloads of road building material per week. By these and other restrictions it is hoped to increase the coal supply, which as everyone realizes is a prime essential in carrying on this war. It is due to a lack of coal that Italy has had to withdraw and suffer the heavy defeat she has experienced within the last week. Coal is so important that it must receive every attention.

The Government has also forbidden the use of open-top cars for the transportation of materials and supplies for the construction, maintenance or repair of public or private highways.

Drexel Motor Car Assets Sold

CHICAGO, Oct. 26—The entire assets of the Drexel Motor Car Corp. have been closed out at auction. The property was valued at $122,410. A plan for refinancing the company was suggested to the creditors, but was unsatisfactory. The Drexel Motor Car Corp. was formed in July, 1916, to succeed the Farmack Motor Car Corp. It was capitalized at $2,000,000.

No Successor for Drysdale Yet

DETROIT, Oct. 26—No successor has been appointed to K. P. Drysdale, advertising manager of the Cadillac Motor Car Co., who resigned recently. At present the work is being subdivided between the members of the advertising department. A dealers' convention is being held this week at the factory.

Alliance Men See Trouble

NEW YORK, Oct. 27—New developments in the affairs of the bankrupt Alliance Tire & Rubber Co., Alliance, Ohio, have been brought to light as the result of evidence obtained by the National Vigilance Committee of the Associated Advertising Clubs of the World, which has caused the arrest of three members of a company selling the stock of this concern. They are charged with having used the mails to defraud.

Yesterday Warren C. Daniel and two of his salesmen were placed under arrest on charges of fraud amounting to $160,000, in connection with the sale of stock of the bankrupt company.

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Offset Sales Slump By Bettering Dealers

Changing Conditions Result In Many Factories Seeking Better Representation

DETROIT, Oct. 27—Business has been quiet for the past week, though in many instances the manufacturers report that it is as good as can be expected at this time of the year. These manufacturers are the large producers, and the ones that have been enjoying a consistently larger demand during the past year.

The freight situation has continued bad, and drive-aways have offered little outlet because of the weather. The result is that cars have piled up more or less at the various factories. The lake routes are at present offering a partial outlet to the East.

One result of the war that is becoming evident is the attempt of the factories to materially better their dealers from a sales and service standpoint. They are realizing that increased sales resistance must be met with better salesmanship. Nearly all of the factories are holding dealer schools, service schools, conventions and conferences with just this end in view. They are attempting to make their present dealers better dealers.

In other instances, manufacturers are increasing the territory of their already successful dealers, and letting those dealers apply their methods to the entire territory. Unsuccessful dealers are being eliminated, and the successful ones becoming more powerful.

At present the material situation in the larger factories is not bad in most instances. Factories having large purchasing power and ready money are securing most of the attention of the material sources. The smaller manufacturer, with little resources and little demand, is the one that to-day is suffering. However, in all quarters much doubt is expressed as to the availability of obtaining material in the future.

It is stated that the iron and steel trade have been requested to furnish complete data to the federal trade committee as to their contracts and obligations during the next 9 months, and fear is expressed that present standing contracts may be abrogated. As the tonnage is limited, it is possible that this, because of the large amounts of iron and steel necessary for war contracts, will cause a general shortage of material in the motor car field.

Decimal Units for Jobbing Trade

CHICAGO, Oct. 27—Packing goods in units of ten instead of dozens is one of the results of the standardization work taken up by the National Association of Automobile Accessory Jobbers. Not all manufacturers can change over at once, but a number will have ten-unit goods for the coming season, others will change as new cartons are ordered, and some who cannot pack in ten-units will bill on a ten basis. One of the great advantages of the new method is convenience in figuring prices.

Plans Chain of Garages

CLEVELAND, Oct. 27—The Service Auto Storage Co. has capitalized for $500,000 and plans to erect a chain of public garages. A. M. Gordon, Citizens Building, is organizer. The new company has taken title to three parcels of land, one being 40 by 250 ft., another 76 by 250 ft. on East Seventy-ninth Street, and another property 250 ft. on Lake Front Avenue, and also a plot of land fronting 118 ft. on Euclid Avenue and 140 ft. on Rosedale Avenue, East Cleveland. Plans are already made for a two-story garage at East Seventy-ninth Stret, near Hough. Officers of the company are: A. M. Gordon, president; Joseph Newman, vice-president; Irwin Harris, secretary-treasurer. H. A. and N. C. Beckerman are directors.

Four More Accessory Exhibitors

NEW YORK, Oct. 30—Four new accessory exhibitors have been added to the national shows. These are: Eisemann Magneto Co., Brooklyn, New York only; W. E. Tratt Mfg. Co., Chicago, both New York and Chicago; Menominee Electric Products Co., New York, both shows, and the G. L. W. Spring Oiler Co., San Diego, Cal., both shows.

May Exempt from Floor Tax Cars Held For Retail Sales

WASHINGTON, Oct. 29—New motor cars and trucks which dealers had on their floors Oct. 4 and have been holding for retail sale may not be taxable under the new war revenue measure. Although the treasury department has previously made a preliminary ruling that all cars and trucks held for sale should be taxable at 1½ per cent regardless of whether they are sold wholesale or retail, a subsequent ruling has been made which may change this situation. The ruling follows:

"Where a corporation operates one or more retail stores and under the same name, but separately as far as bookkeeping and stock keeping are concerned, the corporation inventory return of stock on hand should include only that in the wholesale department. Where the bookkeeping and stockkeeping of the wholesale and retail departments of establishments are kept separately, they will be regarded as if they were separate and distinct departments, and the retail stock will not be subject to the floor tax."

It is believed by General Manager Reeves of the National Automobile Chamber of Commerce that this ruling has been made to apply more particularly to trades other than the automobile trade.

The N. A. C. C. is at present endeavoring to obtain a ruling on this point applying directly to the sale of new motor cars and trucks. It is expected that the ruling given above will have a very important bearing on any other ruling which is given.

Slow Sales in East Are Blamed on Loan

Condition of Unrest Obtains Through New England—Used Car Market Inactive

NEW YORK, Oct. 29—A condition of unrest, flanked by the second Liberty Loan on one hand and the rising cost of necessaries on the other, is pervading New England and Eastern New York. Dealers in the larger cities handling higher priced cars report a slowing up in sales with but few exceptions, though dealers in lower priced cars do not appear to have been so greatly affected. The used car market in New York has experienced a decided slump during the week gone by and nearly every dealer reports rather larger stocks than can comfortably be handled, with little demand.

Among dealers in new cars, one man selling cars in the $3,000 class reports that August was the biggest month he has had yet, that September was not quite as good as September, 1916, but that October will be his record month. Another, in a still higher class, reports sales falling off. Another says that sales slowed for 10 days or two weeks but that for the last few days they have been good. The falling off has been due in a measure to freight congestion, one man says, quite as much as to any other cause.

The accessory situation is not all that can be desired. Both freight and express shipments are months getting in and several dealers report it impossible to get products which come in tin cans, due probably to the shortage of tin. On Long Island, particularly near the army cantonments, accessory dealers are doing a splendid business. In general, though, garages and shops are suffering for mechanics. There does not appear to be any shortage of unskilled labor, though the munition plants have taken their toll of skilled men.

Reports Brisk Business in Southwest

DETROIT, Oct. 27—V. S. Hibbard, sales manager of the Regal Motor Car Co., who has just returned from a trip through the Southwest, reports that business conditions between the Northwest Canadian provinces and the Gulf of Mexico are particularly good. Good crops have contributed to the prosperity.

$640,485 Stewart-Warner Profits

CHICAGO, Oct. 27—The Stewart-Warner Speedometer Co. reports for the quarter ended Sept. 30 net profits, after deducting 6 per cent. income tax, not allowing war tax, of $640,485, and for the 9 months ended Sept. 30 $1.840,390. Estimating the war tax at $190,000, the net profits for the period would be $1,650,000, as compared with $1,880,000 after allowing 2 per cent tax, but no war tax, in the corresponding period of last year.

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Hearne and McCarthy Win Uniontown Meet

Hearne Does 168 Miles at 93.75 M.P.H. and McCarthy Wins Other Two Events

UNIONTOWN, PA., Oct. 29—Eddie Hearne this afternoon won the 150-lap, 168-mile Autumn classic in 1:49:02.45 at an average speed of 93.75 miles per hour. Hearne's Duesenberg was the only car to make a non-stop race.

After leading the field from the 73rd lap, Pete Henderson in a Duesenberg bumped into the inner guard rail on the 114th lap and was put out of the race. He was a half lap ahead of the field at the time. His team mate, Tommy Milton, was driven from first position in the 147th lap by a flat tire, though at the time he held a lead of a lap and got back in the running in time to claim second position at the finish. Gaston Chevrolet and his mechanician, Sal Barbarini, were both injured to some extent in the 112th lap when the Frontenac left the track in the backstretch, tearing out several panels of guard rail in the crash. Both men were squeezed in their seats but sustained no serious injury.

Ralph Mulford held the lead with his Frontenac for one lap, the 46th, and went out in the next lap with engine trouble. Gil Anderson took his Miller off the course in the 15th with engine trouble.

Fred McCarthy won the 50-lap consolation event in which six cars were entered. He also came in a winner in the 50-lap match race in which Dave Lewis, in a Hoskins, and I. P. Fetterman were entered and finished in the order named.

The races were twice postponed because of inclement weather. The summaries follow:

Autumn Classic, 150-lap, 168½ miles.

1—Eddie Hearn, Duesenberg.....1:49:02.45
2—Tommy Milton, Duesenberg.....1:49:27.45
3—Ira Vail, Hudson 1:54:37.05
4—Dave Lewis, Hoskins 1:55:24.03
5—Denny Hickey, Hudson 1:56:58.11

Consolation, 50-lap, 56¼ miles.

1—Fred McCarthy, Hudson 38:20.18
2—Jack Conway, Hudson 38.20.75
3—Bobby Shoff, Haynes 42:39.58
4—Nat Fetterman, Haynes 43:43.49

U. S. A. Challenge trophy race, 50-lap, 56¼ miles (average, 93 miles).

1—Fred McCarthy, Hudson 36:12.61
2—Dave Lewis, Hoskins 36:16.79
3—I. P. Fetterman, Peerless.....36:48.34

Johnson Would Help Racing

NEW YORK, Oct. 30—A neutralizing potion seems to have been injected into the plans for organizing speedway race drivers into a body to be known as the National Grand Circuit of American Speedways. C. W. Johnson, president of the Uniontown Speedway Association, has been looked upon as the promoter of the plan, although his name has not been officially given as the controlling executive. Some of the western speedway managers were visited by Johnson last week and he outlined to them his plans, which he says are not such as to militate against the American Automobile Association, but rather are that of co-operation between that body, the American Speedways Association and the new organization.

Briefly, Johnson's plans, as nearly as can be learned now, are these: To bring together a field of 28 or 30, or perhaps more drivers, all of whom would drive under the management of the new organization, which, of course, has its rules and regulations that are strictly ironclad and provide for suspension, fines and expulsion for a violation of any of a certain list of defined infractions. This field of drivers is to be entered, furnished with cars, and financed, thus giving to speedway managers assurance of a large field of starters for each event.

Johnson says this would be helpful to the A. A. A. and the American Speedways Association instead of detrimental, and that there is nothing of the outlaw atmosphere to the proposed organization of which he is the attributed head.

There are certain objections to the plan. Granting that the new organization is not of the calibre to be branded "outlaw," and that it is to be more of a booking agency for speedway racing, with this its chief purpose, it is difficult to conceive how such an organization could have the drawing power that race entries that included such names as De Palma, Resta, Aitken, Anderson, Cooper, Louis Chevrolet and others of that standing have had. The new organization has not in its membership the name of a single speedway champion and few of those who have become more or less known in the last two years.

Smith-Hudford Merger Denied

NEW YORK, Oct. 30—Rumors that the Smith Motor Truck Co., Chicago, making the Smith Form-a-Truck, and the Commercial Car Unit, Philadelphia, making what was the Hudford attachment, have been merged are discounted by Charles E. Danforth, a banker of this city and one of the members of the Smith creditors' committee. Danforth states that such a suggestion was made by one of the creditors, but was not accepted, and is doubtless responsible for the rumor.

The Smith company, Danforth states, is doing well since the formation of the creditors' committee. This committee has advanced $100,000 to pay off all the small creditors and the company is producing. Thursday, Oct. 25, it received orders for 187; Friday, 89, and Saturday, 62. He states as his belief that the company will pull out of its difficulties.

M. A. M. Allotting Boston Space

NEW YORK, Oct. 29—The Motor and Accessory Manufacturers, Inc., is allotting space at the Boston show to its members. Thus far about 5000 ft. has been contracted for and about 30 companies have been listed as exhibitors. About one-third of the members who exhibit at New York and Chicago will be represented in the Boston show.

$12,447,000 Liberty Bonds for New York

Dealers Subscribe Nearly Half, Remainder Being Taken by Big Manufacturers

NEW YORK, Oct. 29—Last week's Liberty Loan drive by the automobile and allied trades in this city resulted in raising over $12,000,000. The dealers and several of the big manufacturers raised $5,000,000. This added to the $4,000,000 subscribed by General Motors, Chevrolet, and United Motors; the $2,000,000 taken by the Packard company, and the $1,447,050 by General Electric, brought the total up to $12,447,050. A final count on the Liberty Loan work of the automobile field has not yet been made and it is expected that the total will eclipse these figures.

Minneapolis Takes $404,850

MINNEAPOLIS, Oct. 29—Final reports give the Liberty bond subscriptions by the Minneapolis Automobile Trade Association as $404,850 in 1427 subscriptions, which is 2½ per cent of the Minneapolis allotment of $16,000,000. The total reached $25,000,000. The dealers raised more than 100 per cent of their own allotment.

This was parceled as follows: Automobile dealers and employees, $227,150; motor truck dealers and employees, $25,950; tire men and employees, $24,000; accessory dealers and employees, $54,850; oil dealers and employees, $67,900; garage owners and employees, $15,300.

The association has instituted a new campaign, supplementing its motor reserve. In 500 towns it has interested dealers to supply names of 10 owners of cars who will serve the Federal war branches or the Minnesota Safety Commission by giving transportation to agents of the war, navy and justice departments, etc. The dealer will distribute the work and see that no one overdoes the use of these cars. Upon receipt of 29 cents each the association will provide emblems.

Bonds Instead of a Show

FORT DODGE, IOWA, Oct. 26—At a meeting to-night of the Fort Dodge Automobile Dealers' Association it was unanimously voted to invest the estimated cost of the 1918 show in Liberty bonds and dispense with the show. The association takes $10,000 in bonds.

St. Louis Worked Hard

ST. LOUIS, Oct. 29—Local automobile men did not make a specialized effort on the Liberty loan, but worked with teams to which they were assigned by the business bodies. The Packard-Missouri Motor Co. made the most interesting announcement in this connection. During the last week it announced that the sale price of all cars sold during the week would be invested in Liberty bonds. The amount has not been made public.

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Prominent Tradesmen Assume New Duties

Resignations and Promotions Place Workers in New Places

E. H. Olimb has resigned from the sales organization of the B. F. Goodrich Co., where he was traveling representative for the Diamond tire division with Akron as his headquarters. He has accepted a position with the Lancaster Tire & Rubber Co., Columbus, Ohio, as district manager.

W. L. Agnew, formerly director of advertising and publicity for the Chalmers Motor Co., is vice-president and general manager of the F. E. Stuyvesant Motor Co., Cleveland Hudson distributer.

V. S. Faast has resigned as vice-president of the Missouri Auto Specialty Co., and has been appointed sales manager of the Har-Ward Mfg. Co., St. Louis.

Willard S. Frency, formerly of the C. S. Von Poettgen Advertising Agency, has been appointed director of sales of the Monarch Governor Co., Detroit.

J. G. Perrin of the Timken-Detroit Axle Co. and formerly factory manager of the Lozier Motor Co. is now in the equipment division of the signal corps at Washington in the plane design section.

Joseph Bourquin, production manager of the Liberty Motor Car Co., has joined the truck department at Washington.

G. H. Calhoun, formerly connected with the Southern Auto Co., Laurel, Miss., and later with the Hickman-Fulmer Motor Co., Hattiesburg, Miss., is now connected with the Interstate Electric Co., New Orleans.

John D. Sellers, for years connected with Gus D. Revol, selling the Cadillac in New Orleans, has now branched out for himself, and will sell the same car but in a new field. Sellers has organized the Sellers Motor Co., Inc., of which he is vice-president and general manager, and will do business at Jackson, Miss. He has the Cadillac agency for the entire State of Mississippi.

James W. Florida has been commissioned a major of infantry, attached to the Motor Transportation Corps. He will soon be in France.

Hal. G. Hoffman, manager of the Los Angeles Studebaker branch, has resigned to enter the service, and L. A. Keller, Portland, has taken his place.

F. A. Dalton has been made Studebaker branch manager at Indianapolis. He was formerly in Los Angeles.

E. H. McCarty has been appointed Portland, Ore., Studebaker branch manager to succeed L. A. Keller, who has been moved to Los Angeles.

C. R. Hoyne has become a captain in the United States Reserve Branch of the Ordnance Department. He was formerly factory representative of the Autocar Co.

T. E. Cathcart, advertising manager of Vim Company, Philadelphia, has received a commission of first lieutenant in the United States Army. His place is being filled by A. G. McKenzie.

E. C. Bull, sales manager of the Hudson Motor Car Co. of New York City, has resigned his position to take entire charge of the manufacture and sale of the new Controllite motor car lens.

Walter S. Cramer, who for many years has been identified with the electric vehicle industry and who was early connected with the sales department of the Waverley Co., Indianapolis, and later with the Woods Motor Vehicle Co., Chicago, has recently been appointed assistant manager of sales of the Philadelphia Storage Battery Co., with headquarters at Philadelphia, Pa.

H. L. Dickey has been ordered to active service in the U. S. Army. His business connection prior to taking up Government service was that of general sales manager for the Moto-Meter Co., Inc., Long Island City, New York. Dickey was recently commissioned with the rank of captain in the Motor Division of the Ordnance Section, U. S. A.

C. B. Rose, vice president of the Velie Motors Corp. and for many years chief engineer of that company, has been called to Washington to serve in the Inspection Bureau of the newly formed Aviation Department. He has been granted leave of absence by the Velie Motors Corporation for the period of the war.

C. R. Martin, advertising manager for the Goodrich Rubber Co., Kansas City, has gone to the Mason Tire Co. as office manager.

B. D. Van Orden has joined the wholesale sales force of the Grant Motor Car Corp., traveling the eastern territory. His headquarters are at Binghamton.

Blaine Rawdon, formerly manager of a transportation company in Chicago, Ill., has joined the Croly Sales Co., Syracuse, Republic truck distributer in Central New York.

Lee Coleman, formerly wholesale sales manager for Adrian H. Boyce of Seneca Falls, has been transferred to the management of Mr. Boyce's Syracuse branch, in which he has acquired an interest.

Charles Kirschenbaum has retired from the sales department of the Franklin Automobile Co. to enter retail sales work with Bull & Young, Syracuse Franklin dealers.

W. B. Jewell has resigned as manager of the Syracuse Mitchell Agency.

C. G. Mor, chief designer and factory superintendent of the Ghent Motor Car Co., Ottawa, Ill., has resigned after six months' service. His successor has not yet been chosen.

William McKenzie, Springfield, Ill., for five years manager of the Springfield branch of the Ingram Motor Car Co. of Peoria, Ill., has been promoted to sales manager with headquarters at Peoria. George H. Weinold, salesman with the Springfield branch, has been advanced to manager.

S. Barr, Detroit, has joined the sales force of the Simons Sales Co., Overland distributer, Detroit, as foreign manager.

C. C. Collins, manager of the Chippewa Auto Co., Sault Ste. Marie, Mich., has resigned and is succeeded by John Sims.

R. A. Purcell, Jackson, Mich., is shop superintendent of the L-C Auto Co.

L. W. Bemis, former manager of the Scripps-Booth Co., Spokane, has resigned to become manager of the Truck Department with H. W. Brown, Stutz dealer, Los Angeles.

Capt. A. J. Slade, who has done valuable work with the Equipment Division of the Signal Corps, has been relieved from his work in this connection. It is understood he shortly will be sent to France. Capt. Slade will be succeeded with the Signal Corps by Capt. E. R. George.

George W. Smith, Jr., is now connected with the aviation department of the United States, having resigned as assistant consulting engineer of the White Co. He will be located in Philadelphia.

J. E. Clifford has been made manager of the wholesale department of the H. Barcroft White Corp., Syracuse, Nash and Chevrolet distributer.

J. H. Sam Jule has been made manager of the King Motors Corp. in St. Louis, vice H. Porter, transferred to Wichita.

H. J. Furer has opened a Missouri Branch for the U. S. Air Compressor Co. of Cleveland, Ohio, at 2644 Locust Street, St. Louis.

E. J. Carroll of the King Motor Car Co. has been made service manager of the Kings Motor Corp., St. Louis.

C. S. Crawford has succeeded E. G. Gunn as chief engineer and assistant general manager of the Premier Motor Corp. Gunn is now in Washington connected with the truck design division.

M. W. Stutzman is district manager in West Virginia and eastern Kentucky for the Commerce Motor Car Co. He was formerly with the Smith Motor Truck Corp., Chicago.

W. T. Cullen, formerly in the publicity department of the Chalmers Motor Co., is to open a garage and accessory store in Miami, Fla. F. P. Dulmage is a partner in the new concern, the main business of which is to rent cars to tourists.

Glenn A. Sanford is sales engineer of the Perlman Rim Corp., having been promoted from purchasing agent. He will assume his new duties Nov. 1. **Charles C. Lewis,** formerly with the Ford Motor Co., the Maxwell Motor Co. and Mutual Motors Co., will take the position left vacant by Sanford.

E. V. Tower is chief engineer of the Hession Tiller & Tractor Corp., Detroit. He was formerly head of the experimental department of the Maxwell Motor Co. and has also been connected with the production of the Harroun Motors Corp.

F. S. Macourck has resigned as purchasing agent of the Peerless Motor Car Co., Cleveland, and is succeeded by R. G. Scott. Macourck is entering business for himself. Scott was at one time with the Packard Motor Car Co. and before that with the E. R. Thomas Co. of Buffalo.

Paul Minnard has joined the sales department of the H. Barcroft White Corp., Syracuse, distributer of Nash and Chevrolet cars.

A. R. Kroh has joined the Selden ranks as Western Division Sales Manager of the Selden Truck Sales Co. of Rochester, N. Y., with headquarters at Chicago, Ill.

"Al" Poole, of early automobile racing fame, and for many years associated with the Bosch Magneto organization, has joined the factory selling force of the Wire Wheel Corp. of America. His headquarters will be in the Buffalo plant of the corporation.

All Bull's Time for Controllite

NEW YORK, Oct. 27—E. C. Bull, who has been president of the Super-Lighting Co., New York, manufacturer of the Controllite lens, since the formation of the company, has resigned his position as general sales manager for the Hudson Motor Car Co. of New York to devote all his time to the Super-Lighting Co. At the same time M. A. Herbert, up to the present Bull's assistant at the Hudson company, becomes treasurer of the Controllite company and W. E. Johnes becomes secretary. It is planned to increase production and enter upon a campaign of national advertising.

Franklin Business Normal

SYRACUSE, Oct. 30—The H. H. Franklin Mfg. Co. is operating at normal capacity and is not experiencing difficulties as to materials or men, according to a statement from President H. H. Franklin. War conditions have not had any detrimental effect.

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Minneapolis Begins Annual Move-around

New Ones Come and Old Ones Change and They're Fattening Hogs on the Speedway

MINNEAPOLIS, Oct. 27—The annual fall change has begun on Motor Row. In the last few weeks a few firms have been replaced or have quit business. The Chalmers Motor Co. of Minnesota, Inc., advertises that after Nov. 1 it will distribute Maxwell automobiles and will handle sales and service at 1656 Hennepin Avenue. The Maxwell Motor Sales Corp. at 909 Hennepin Avenue will close.

The Brice Auto Co., handling Grant cars, has incorporated at $50,000. Milton and Robert Brice are eligible for war service, but retain their interest. The members of the Carlson Motor Co., handling the Kissel, have bought into the Brice company and moved to its quarters at 1641 Hennepin Avenue. The Brice company officers are: President, A. Carlson, Chicago; vice-president, Walter Carlson; secretary-treasurer, Elmer Carlson.

The Oneida Motor Truck Co. has opened at 1626 Harmon Place, which the Carlson company vacated. Sales of the Grant are to be pushed in Minnesota and western Wisconsin. The Kissel territory is Minnesota and South Dakota.

The Paterson Motor Car Co. has been formed to distribute the Paterson, released by the Santweier-Finley Co. and opened at 1203 Hennepin Avenue. The Pence Automobile Co. has begun to assemble Buick cars in its big warehouse and has taken over the G. M. C. truck from B. E. Fawkes.

Reilly-Herz Co., Inc., handling the Elgin, has more than doubled its space by removing to 1400 Hennepin Avenue, former quarters of the Commercial Vehicle Co. Geo. A. Morse, Inc., has moved to a new building at 1607 Hennepin Avenue with the Inter-State and Metz.

The Northwestern Haynes Automobile Co. has enlarged its plant at 1012 Hennepin Avenue to 60 x 200. The addition, 60 x 75, contains a shop and parts department. Day and night service has been established. The International Rubber Service Co. has opened an office to distribute Gates tires at 78 Twelfth Street S.

Hogs are being fattened on the property of the Twin City Motor Speedway. Receiver Elijah Barton has leased part of the tract for a hog farm supplied with garbage from Fort Snelling adjoining and skim milk from dairy farms.

Chandler Earns $2,100,000

CLEVELAND, Oct. 26—The Chandler Motor Car Co. reports net profits for the period from Jan. 1, 1917, to Oct. 1, 1917, as $2,110,000, equal to $30 per share, as against $1,339,000, equal to $19 per share, for the corresponding period of 1916. The increase of cars shipped during the 1917 period amounted to 33 per cent over a year ago. Total quick assets amount to $4,919,774, against which there are only $882,741 in quick liabilities and of this $210,000 is the dividend requirement. A comparison of the balance sheets up to Sept. 1 and Oct. 1 follows:

Assets.

	Sept. 1	Oct. 1
Cash	$1,265,885	$974,466
Liberty bonds	278,576	251,933
Accounts receivable	284,138	307,426
Inventories	3,552,639	3,385,949
Plant and Equipment	491,882	638,541
Other assets	95,182	100,370
Good will	5,000,000	5,000,000
Total	$10,968,302	$10,658,685

Liabilities.

Capital stock	$7,000,000	$7,000,000
Accounts payable	1,102,071	672,741
Reserves	182,862	175,440
Surplus	2,683,369	2,600,504
Total	$10,968,302	$10,658,685

Leavitt Takes Olds in Two States

SAN FRANCISCO, Oct. 27—J. W. Leavitt & Co., one of the oldest dealers in the country and a pioneer in the development of the motor car trade on the Pacific Coast, has just taken over the distribution of the Oldsmobile for the entire states of California and Nevada.

J. W. Leavitt & Co. was formed in 1894 to handle bicycles. In 1901, Leavitt contracted for 50 motor cars, which was looked upon as a gigantic undertaking in those days. From this small contract the business was expanded until in one year 9,000 cars were sold. In July, 1916, Leavitt sold his agency to the Willys-Overland Co. but maintained his organization intact. He then contracted to handle the Chevrolet and to this has been added the Oldsmobile.

When the Chevrolet was taken on a new building, 72 x 137, four floors and mezzanine, was erected and is one of the most beautiful and most perfectly appointed dealer buildings in the country. It will be duplicated in Los Angeles. In his organization, Leavitt's principal associates are A. D. Plughoff, W. J. Pedler and L. D. Starr.

Probable Overland Earnings $9,000,000

NEW YORK, Oct. 29—It is estimated that Willys-Overland will earn in the neighborhood of $9,000,000 for 1917. The third quarter of the year was big both as regards sales and profits, but the final 3 months, owing to smaller shipments, changes in inventory to care for the new car, and factory rearrangement necessary for the Curtiss Aeroplane Co. and new car operations, will not be a very big factor in the net earnings.

Taylor Gets Standard

NEW YORK, Oct. 23—The Standard Steel Car Co. has appointed the Taylor Motors Corp. as distributor for the Standard 8 in the metropolitan territory, succeeding the Duffy Motors Corp.

Bodies of All Makes to Be in One Catalog

New Company Formed to Act As Distributer of Products of Hundred Manufacturers

NEW YORK, Oct. 29—The Commercial Motorbody Corp. has been organized to act as a distributer of commercial Motor bodies. It will represent nearly 100 companies, according to its present plan, and will issue a catalog showing 400 different types.

Under the present plan, each manufacturer sends his own catalog to the dealer with his own assortment of styles. This new corporation plans to include all styles in its catalog so that a dealer's customer may have a choice of everything made in the entire trade. The catalog will be issued about Jan. 1. The bodies range all the way from small delivery types up to heavy dumping bodies.

Warehouses are to be operated in Chicago, Detroit, New York and other centers. The offices of the company are at 50 East Forty-second Street. The officers are: President, P. H. Patriarche; vice-president, Charles M. Eaton, of Raymond Pynchon & Co., bankers; treasurer, Paul D. Langdon, H. L. Horton & Co.; secretary, F. Gates Porter, Pynchon & Co. Directors are the officers and W. A. Harriman, vice-president, Union Pacific; T. W. Cole, president, Cole Paper Co.; J. K. Robinson, Jr., president, Ox Fibre Brush Co.; Frederick A. Wagner, of the law firm of Parker, Davis & Wagner, New York.

Van Benschoten Opens Kingston Branch

POUGHKEEPSIE, N. Y., Oct. 29—John Van Benschoten, whose headquarters are in this city, has opened a branch at Kingston, which with the Newburgh branch already in operation gives him three locations in the Hudson Valley. He handles the Dodge, Marmon, Peerless, Chalmers and Nash, in addition to the Smith Form-a-Truck.

Mat Co. Incorporates

MUSKEGON, MICH., Oct. 25—The Mat Co. has incorporated for $10,000 and will manufacture cocoa fiber products, including running board and tonneau mats. It is now located in the new building of the Muskegon Paper Box Co. and will employ about 50 men when all the machinery arrives. W. B. Bassett is president; Walter Krebs, vice-president; Oscar Berg, secretary and treasurer.

Holt Company to Double Capacity

PEORIA, ILL., Oct. 27—The Holt Mfg. Co. will shortly double the size of its plant. At a meeting of the board of directors this week contracts were let for new buildings and machinery aggregating $1,000,000.

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Specifications of the Leading Cars

MOTOR WORLD GUIDE

Revisions Are Made in Table Every Week

Model	Motor	S. A. E.	Ignition	Carbureter	Starter	Clutch	Gearset	Wheelbase	Tires	Rims	2-Passenger	5-Passenger	7-Passenger	Coupe	Sedan	Limousine	Detachable Top
ABBOTT																	
6-44	6-3½x4½	25.3	Remy	Stmbg	Remy	DP	3	122	32x4	SS	1295	†1295	1295	....	1920	....	....
6-60	6-3½x5½	29.4	Remy	Stmbg	Remy	DD	3	122	34x4	SS	1595	....	1595	2150	2150	....	....
ALLEN																	
41	4-3½x5	22.5	Conn	Stmbg	A-Lite	D	3	112	32x3½	SS	†1095	1095	....	....	1395	....	....
AMERICAN-SIX																	
A	6-3½x5	21.6	G & D	Zenith	G & D	D	3	122	32x4	SS	....	1375	....	....	....	....	....
ANDERSON																	
Six-40	6-3½x4½	25.4	Conn	Zenith	Wsths	DP	3	120	33x4	SS	....	1435	....	....	2165	....	....
APPERSON																	
6-18	6-3½x5	29.4	Remy	Rafid	Bijur	DP	3	130	34x4	SS	†2200	....	2200	....	....	....	....
8-18	8-3½x5	33.8	Remy	Johnson	Bijur	DP	3	130	35x4½	SS	†2550	....	2550	....	....	....	....
AUBURN																	
6-39	6-3½x5	23.4	Remy	Rafid	Remy	DP	3	120	34x4	SS	1195	1195	*1220	....	....	....	1380
6-44	6-3½x5½	29.4	Delco	Rafid	Delco	DP	3	131	35x4½	SS	....	†1635	1635	....	....	....	1935
AUSTIN																	
Hy-King	12-2½x5	39.6	Delco	Stmbg	Delco	D	6	142½	34x4½	QD	3750	3750	4000	4550	4950	5250	....
BIDDLE																	
D	4-3½x5½	22.5	Dixie	Zenith	G & D	DP	4	122	32x4	QD	2200	2350	†2275	....	....	3800	3900
BOUR-DAVIS																	
17	6-3½x4½	25.3	Remy	Stmbg	G & D	DP	3	118	32x4	QD	....	1385	....	....	....	....	....
BREWSTER																	
	4-4 x5½	25.6	Bosch	Zenith	U.S.L.	C	3	125	34x4½	SS	7200	....	....	....	8000	8500	....
BRISCOE																	
B4-24	4-3¹⁵⁄₁₆x5½	16.3	Conn	Buick	A-Lite	C	3	104	30x3½	C	725	725	....	....	....	....	850
BUICK																	
E 4-34-35	4-3½x3½	18.2	Delco	Marvel	Delco	C	3	106	31x4	C	795	795	....	....	....	....	....
E 44-45	6-3½x4½	27.3	Delco	Marvel	Delco	DP	3	118	34x4	SS	1265	1265	....	‡1695	....	....	1465
E-49	6-3½x4½	27.3	Delco	Marvel	Delco	DP	3	124	34x4½	SS	....	....	1495	....	2175	....	....
CADILLAC																	
57	8-3½x5½	31.2	Delco	Own	Delco	D	3	{132 {125	35x5 34x4½	SS	2805	....	2805	....	3650	4145	....
CASE																	
T17	4-3½x6	21.0	Conn	Rafid	A-Lite	C	3	120	34x4	SS	†1190	....	1190	....	....	....	....
U	6-3½x5½	28.4	Wsths	Rafid	Wsths	D	3	125	35x4½	....	....	....	1875	....	....	....	....
CHALMERS																	
6-30	6-3½x4½	25.4	Remy	Stmbg	Wsths	DP	3	{117 {122	32x4 34x4	SS	1250	1250	1350	1625	1850	2925	....
CHANDLER																	
17	6-3½x5	29.4	Bosch	Rafid	G & D	D	3	123	34x4	SS	1595	....	1595	2195	2295	2895	....
CHEVROLET																	
490	4-3½x4	21.7	Conn	Zenith	A-Lite	C	3	102	30x3½	C	635	635	....	....	1060	....	....
FA-5																	
FA-2	4-3½x5½	21.7	Remy	Zenith	A-Lite	C	3	108	33x4	SS	935	935	....	....	1475	....	....
D	8-3½x4	36.45	Remy	Zenith	A-Lite	C	3	120	34x4	SS	1385	1385	†1385	....	....	....	....
COLE															{2495		
860	8-3½x4½	39.2	Delco	Stmbg	Delco	C	3	127	35x4½	SS	†1995	....	1995	2495	{2695	....	....
COLUMBIA																	
	6-3½x4½	25.3		Stmbg	W.Lnrd	DP	3	115	32x4	....	†1495	1350	1295	....	1995	....	....
COMMONWEALTH																	
Ultra 4-40	4-3½x5	19.6	A.Kent	Carter	Dyneto	DD	3	110	32x3½	C	†895	895	....	....	....	....	....
CROW-ELKHART																	
CE-33-35	4-3½x5	19.6	Conn	Zenith	Dyneto	D	3	114½	32x3½	SS	†995	995	....	....	1195	1275	....
DANIELS																	
B	8-3½x5	33.8	Wsths	Zenith	Wsths	D	3	127	34x4½	QDR	†3100	3100	3100	....	....	....	....
DAVIS																	
H & I	6-3½x4½	25.3	Delco	Stmbg	Delco	C	3	119	34x4	....	1295	1295	1295	1695	1795	....	1995
J	6-3½x5½	29.4	Delco	Stmbg	Delco	C	3	124	34x4½	....	....	1595	1595	....	....	....	....
DETROITER																	
6-45	6-3½x4½	25.3	Conn	Ball	A-Lite	D		119	33x4	SS	‡1395	1395	†1425	....	1875	....	....
DISPATCH	4-3½x5	22.5	Bosch	Rafid	U.S.L.	CV	4	120	36x3½	QD	1135	....	1210	1400	....	....	....
DIXIE FLYER																	
L835	4-3½x5	16.9	Conn	Carter	Dyneto	D	3	112	32x3½	SS	†895	895	....	....	1295	....	....
DOBLE	2-5 x4	....	Own	Dobl Stmb	Wagner			135	35x5	....	....	....	2500	....	....	....	....

Model	Motor	S. A. E.	Ignition	Carbureter	Starter	Clutch	Gearset	Wheelbase	Tires	Rims	2-Passenger	5-Passenger	7-Passenger	Coupe	Sedan	Limousine	Detachable Top
MADISON																	
4	....	....	....	....	....	....	....	120	34x4	....	....	....	....	....	....	....	....
	6-3½x5	23.4	Remy	Rafid	Remy	DD	3	115	34x4	SS	†1285	1285	1375	....	....	....	....
MAIBOHM																	
A	4-3½x4	15.6	A.Kent	Zenith	Disco	DD	3	105	30x3½	C	795	....	....	....	....	....	....
MARION HANDLEY																	
6-40	6-3½x5	23.4	Wsths	Stmbg	Wsths	DD	3	120	32x4	SS	†1350	....	1350	....	....	....	....
6-60	6-3½x5½	29.4	Wsths	Stmbg	Wsths	DD	3	125	35x4½	SS	†1650	....	1650	....	2350	....	....
MARMON																	
34	6-3½x5½	33.7	Bosch	Stmbg	Bijur	C	3	136	32x4½	QD	....	3550	....	....	....	....	....
MAXWELL																	
25	4-3½x4½	21	A.Kent	K D	Simms	C	3	109	30x3½	C	†745	745	....	1095	1095	1095	855
McFARLAN																	
	6-4½x6	48.6	Mag'to	Stmbg	Wsths	DP	3	136	35x5	QD	3500	3500	3500	....	4600	4650	....
MERCER																	
22-73	4-3½x6½	22.5	Bosch	Zenith	U.S.L.	DD	4	132	34x4½	QD	†3500	*3500	....	....	....	....	....
22-73	4-3½x6½	22.5	Bosch	Zenith	U.S.L.	DD	4	115	32x4	QD	3400	Raceabout	3250	....	....	....	....
METZ																	
25	4-3½x4	24	A.Kent	A.W.T.	Wsths	F	.	108	32x3½	SS	695	695	....	....	....	....	....
MITCHELL																	
D-40	6-3½x5	25.4	Conn	Rafid	Splitdf	C	3	120	32x4	SS	1250	1250	....	1850	1950	....	300x
C-42	6-3½x5	29.4	Conn	Stmbg	Wsths	C	3	127	34x4	SS	‡1490	1510	1525	2135	2275	2850	300x
MOLINE-KNIGHT																	
C	4-3½x5	22.5	Conn	Schebler	A-Lite	C	3	118	34x4	SS	†1575	1575	....	....	....	....	....
G	4-4 x6	25.6	Conn	Schebler	A-Lite	C	3	122	35x4½	SS	†1950	....	1950	2490	....	....	....
MONITOR																	
C-R	4-3½x4½	22.5	Heinse	Schebler	Heinse	D	3	110	32x3½	SS	995	995	....	....	....	....	....
N-O	6-3½x4½	25.4	Heinse	Stmbg	Heinse	D	3	117	33x4	SS	1195	1195	....	....	....	....	....
MONROE																	
M-3	4-3 x4½	14.4	Conn	Zenith	A-Lite	DD	3	96	30x3	QD	565	‡635	....	....	965	....	....
M-6	4-3½x4½	16.9	Conn	Zenith	A-Lite	DD	3	115	32x4	QD	....	1095	....	....	....	....	....
MOON																	
6-36	6-3 x4½	19.8	Delco	Tltsn	Wagner	DP	3	114	32x3½	....	....	....	1095	....	....	....	....
6-45	6-3½x4½	25.3	Delco	Rafid	Delco	DD	3	118	34x4	SS	‡1575	....	1575	....	....	....	....
6-66	6-3½x5½	29.4	Delco	Rafid	Delco	DD	3	125	35x4½	SS	†1850	....	1850	2450	2450	....	....
MURRAY																	
1918	8-3½x5	33.8	Dixie	Zenith	Wsths	DP	3	128	34x4½	..	2800	2800	2800	3300	....	3750	....
NASH																	
671	6-3½x4½	29.4	Delco	Rafid	Bijur	DP	3	125	34x4	SS	....	....	1465	....	....	....	....
681-684	6-3½x5	25.4	Delco	Marvel	Delco	P	3	121	34x4	SS	1295	1295	....	....	1985	....	....
NATIONAL																	
Six	6-3½x5½	29.4	Dixie	Rafid	Wsths	C	3	128	34x4½	QDR	†1995	†1995	1995	2645	2820	....	....
Twelve	12-2½x4½	39.7	Delco	Rafid	Bijur	C	3	128	34x4½	QDR	†2595	†2595	2595	3245	3420	....	....
NELSON																	
	4-3½x4½	15.6	Bosch	Zenith	U.S.L.	D	3	104	32x4	SS	1200	†1400	....	....	1800	....	....
OAKLAND																	
34-B	6-2½x4½	19.0	Remy	Marvel	Remy	C	3	112	32x4	SS	‡990	990	....	1400	....	....	....
OLDSMOBILE																	
45	8-2½x4½	26.4	Delco	Johnson	Delco	C	3	120	34x4	SS	....	....	1467	....	....	....	....
37	6-2½x4½	18.9	Delco	Johnson	Delco	C	3	112	32x4	SS	†1185	1185	....	1595	1695	....	....
OLYMPIAN																	
	4-3½x4½	37	Conn	Carter	A-Lite	D	3	114	32x3½	....	†965	965	....	....	....	....	....
OVERLAND																	
86B4	4-4½x4½	27.2	Conn	Tltsn	A-Lite	C	3	112	32x4	SS	‡905	920	....	1275	1475	....	....
90	4-3½x5	18.2	Conn	Tltsn	A-Lite	C	3	{104 {106	31x4	C	755	770	†815	....	1215	....	....
OWEN-MAGNETIC																	
M-25	6-3½x5½	29.4	Bosch	Zenith	O-M	OM	6	125	34x4½	SS	....	3300	....	3650	....	4350	....
O-36	6-3½x5½	33.6	Bosch	Zenith	O-M	OM	6	136	35x5	SS	‡3950	†3950	3950	....	....	5000	....
PACKARD																	
3-35								{136					4100	....	....	5650	....
3-25	12-3 x5	43.2	Delco	Own	Bijur	DD	3	{128	35x5	QD	....	3700	3700	5050	....	5250	....

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DODGE BROTHERS																			
	4-3½x4½	24	Delco	Stewart	N.E.	D	3	114	32x3½	SS	885	885	....	1350	1350	....	....
DORRIS																			
I-C-6	6-4 x5	38.4	Bosch	Stmbg	Wsths	D	3	130	36x4½	SS	....	....	2785	3325	3350	4150	....
DORT																			
9	4-3½x5	16.9	Conn	Carter	Wsths	C	3	105	30x3½	QD	‡725	725	....	....	1095	....	845
ELCAR																			
D.F.	4-3½x5	19.6	Delco	Carter	Dyneto	DP	3	115	32x3½	SS	845	845	†845	....	....	....	....
ELGIN																			
	6-3 x4½	21.6	Remy	Stmbg	Wagner	DP	3	117	33x4	....	†1095	1095	....	1645	....	....	....
EMPIRE																			
50-51	4-3½x5	24.0	Conn	Stmbg	A-Lite	DP	3	115	33x4	SS	1165	1125	....	....	....	....	....
70-A	6-3½x4½	25.4	Conn	Stmbg	A-Lite	DP	3	120	34x4	SS	†1345	1375	1385	....	1625	....	....
FIAT																			
55	4-5½x6½	42	Bosch	Zenith	Wsths	D	4	140	35x5	QD	....	....	5500	....	....	6500	....
FORD																			
T	4-3¾x4	22.5	Own	{Holly Kngstn	....	D	2	100	30x3½	rC	345	360	....	560	695	....	....
FRANKLIN																			
9	6-3½x4	25.3	A.Kent	Own	Dyneto	D	3	115	{32x4 33x4½	SS	2000	2050	....	2850	2950	3200	....
GLIDE																			
6-40	6-3½x5	23.4	Wsths	Rafid	Wsths	D	3	119	34x4	SS	....	1395	....	....	1595	....	....
GRANT																			
K	6-3 x4½	21.6	Remy	Stmbg	Wagner	C	3	112	32x3½	....	‡875	875	....	....	....	....	....
HAL TWELVE																			
	12-2½x5	39.7	....	Stmbg	Wsths	DP	3	135	34x4½	SS	2600	†2600	2600	....	3500	4500	....
HALLADAY																			
S	6-3 x5	21.6	A-Lite	Stmbg	Wsths	D	3	118	33x4	SS	‡1185	1150	....	....	....	....	....
R	6-3½x5	23.4	Wsths	Stmbg	Wsths	D	3	122	34x4	SS	1385	1385	....	....	....	....	....
HARROUN	4-3½x5½	16.9	A.Kent	Stmbg	Remy	C	3	106	30x3½	....	....	785	....	....	....	....	....
HOWARD																			
	4-3 x4½	14.4	A.Kent	Zenith	Wagner	..	3	100	28x3	....	750	....	....	....	....	....	....
HAYNES																			
36	6-3½x5	29.4	Remy	Rafid	L-N	DP	3	121	34x4	SS	....	1595	....	....	2260	....	....
37	6-3½x5	29.4	Remy	Rafid	L-N	DP	3	127	35x4½	SS	†1725	....	1725	....	2390	....	....
40	12-2½x5	36.3	Delco	Rafid	L-N	DP	3	121	34x4½	SS	....	2095	....	....	2760	....	....
41	12-2½x5	36.3	Delco	Rafid	L-N	DP	3	127	34x4½	SS	†2225	....	2225	....	2890	....	....
HOLLIER																			
196	6-3 x4½	21.6	Remy	Stewart	Apleo	C	3	116	32x3½	SS	....	1085	....	....	....	....	....
188	8-3 x4½	28.8	A.Kent	Stewart	Apleo	C	3	116	34x4	SS	†1285	1285	....	....	....	....	....
HUDSON																			
Super-6	6-3½x5	29.4	Delco	Own	Delco	D	3	125½	35x4½	SS	1650	†1750	1650	1950	2175	2925	....
HUPMOBILE																			
	4-3½x5½	22.5	A.Kent	Zenith	Wsths	D	3	119	34x4	SS	1385	1385	....	....	1735	....	....
NU	4-3½x5½	22.5	A.Kent	Zenith	Wsths	D	3	134	35x4½	SS	....	....	1540	....	....	....	....
INTER-STATE																			
T	4-3½x5	19.6	Remy	Schebler	Remy	C	3	110	33x4	SS	875	925	†950	....	1325	....	....
JACKSON																			
349	8-3 x3½	28.8	A-Lite	Zenith	A-Lite	DP	3	118	34x4	SS	†1495	1495	1570	....	2195	....	1705
JONES	6-3½x5½	29.4	Remy	Stmbg	Remy	DP	3	125	34x4	....	....	1675	1675	....	2550	....	....
JORDAN																			
Sixty	6-3½x5½	29.4	Bosch	Stmbg	Bijur	DD	3	127	35x4½	SS	1995	†1995	1995	....	2650	3300	....
KING																			
EE	8-3 x5	28.8	A.Kent	Ball	Bijur	DP	3	120	34x4	SS	‡1585	†1700	1650	....	2300	....	....
KISSEL																			
100-pt.	6-3½x5	25.3	Remy	Stmbg	Own	C	3	117	34x4	SS	†1295	1295	1385	1735	1735	....	1735
Double-6	12-2½x5	39.7	Delco	Stmbg	Own	DD	3	...	34x4½	....	1385	....	2250	....	2650	....	2650
KLINE																			
6-38-G	6-3½x4½	25.3	Wsths	Rafid	Wsths	DP	3	120	34x4	SS	1495	1495	†1495	....	....	....	....
LEXINGTON																			
6-O	6-3½x4½	25.3	Conn	Rafid	Wsths	DD	3	116	32x4	QD	....	1345	....	....	1510	....	....
6-R	6-3½x4½	25.4	Conn	Rafid	Wsths	P	3	122	34x4	QD	....	....	1585	....	1785	....	....
LIBERTY																			
6	6-3½x4½	25.3	Delco	Stmbg	Delco	DP	3	115	32x4	SS	1350	1350	....	....	1925	....	....
LOCOMOBILE																			
38 Series II	6-4½x5	43.3	Berling	Ball	Wsths	DD	4	139	37x5	QD	†5150	*5000	5000	....	....	6200	....
48 Series II	6-4½x5½	48.6	Berling	Ball	Wsths	DD	4	142	37x5	QD	†6050	*5950	5950	....	....	7200	....
LOZIER																			
84	4-4½x6½	28.9	Bosch	Stewart	G & D	D	4	120	36x4½	SS	....	....	1695	....	....	....	....
82	6-3½x6	36.0	Eismn	Rafid	G & D	D	3	132	36x4½	SS	....	....	2775	....	....	....	....
LUVERNE																			
17	6-3½x5	33.7	Bosch	Schebler	Bosch	DD	.	132	35x4½	SS	....	....	1650	....	....	....	....

PAIGE																			
6-39	6-3½x5	23.4	Remy	Stmbg	G & D	D	3	117	32x4	SS	1330	1330	....	....	1925	....	....
6-55	6-3½x5½	29.4	Remy	Rafid	Remy	D	3	127	35x4½	SS	....	....	1775	2850	....	3230	....
PAN-AMERICAN																			
	6-3½x5	23.4	G & D	Rafid	G & D	D	3	120	33x4½	SS	....	1500	....	....	....	....	....
PATERSON																			
6-45	6-3½x4½	25.4	Delco	Stmbg	Delco	C	3	117	32x4	C	†1295	1265	1295	....	....	....	....
PATHFINDER																			
3-A, B, C	12-2½x5	39.7	Delco	Stmbg	Delco	DD	3	135	35x5	SS	3250	3250	3250	....	....	....	....
PEERLESS																			
56-2	8-3½x5	33.8	A.Kent	Special	A-Lite	DD	3	125	35x4½	SS	†2340	....	2340	2850	2900	3690	....
PIERCE-ARROW																			
38-C-4	6-4 x5½	38.4	Bosch	Own	Wsths	C	4	134	34x4½	QD	4800	4800	†4800	5900	....	....	....
48-B-4	6-4½x5½	48.6	Bosch	Own	Wsths	C	4	142	35x5	QD	5400	5400	5500	6900	....	....	....
66-A-4	6-5 x7	60	Bosch	Own	Wsths	C	4	147½	36x5½	QD	†6400	6400	6500	7900	....	....	....
PILOT																			
6-45	6-3½x5	23.4	Delco	Tltsn	Delco	DP	3	120	32x4	SS	†1295	1295	....	....	....	....	....
PREMIER																			
6-B	6-3½x5½	27.3	Delco	Johnson	Delco	DP	3	125½	35x4½	SS	2285	....	2285	....	....	....	....
PRINCESS																			
4-36	4-3½x4½	22.5	Splitdf	Schebler	Disco	D	3	108	32x3½	..	825	825	‡825	....	....	....	....
REGAL																			
J	4-3½x4½	19.6	A.Kent	Carter	A-Lite	C	3	108	30x3½	QD	....	795	....	....	....	....	....
REO																			
M	6-3½x5½	30.4	Remy	Rafid	Remy	DD	3	126	34x4½	SS	....	†1385	1385	....	1950	....	....
R	4-4½x4½	27.2	Remy	Johnson	Remy	DD	3	115	34x4	SS	‡985	985	....	....	....	....	....
ROAMER																			
R.A.	6-3½x5	23.4	Bosch	Stmbg	Bijur	DP	3	127	34x4	SS	2150	1850	....	....	....	....	....
ROSS																			
	8-3½x5	33.8	....	....	W.Lnrd	DD	3	130	35x4½	SS	‡1850	....	1850	....	....	....	....
SAXON																			
B-5-R	4-2½x4	12.1	A.Kent	Schebler	Wagner	DD	3	96	30x3	DC	395	....	....	....	....	....	....
S-4	6-2½x4½	19.8	Remy	Stmbg	Wagner	DD	3	112	32x3½	SS	935	935	....	1395	....	....	....
SAYERS	6-3½x4½	25.3	Delco	....	Delco	P	3	....	32x4	....	....	1295	....	....	....	....	....
SCRIPPS-BOOTH																			
D	8-2½x3½	22.0	Remy	Zenith	Wagner	DD	3	120	32x4	SS	†1425	....	....	....	....	....	....
G	4-3½x4	21.7	Remy	Zenith	Remy	C	3	110	30x3½	C	1250	....	....	....	....	....	....
SIMPLEX																			
5	6-4½x6½	45.9	Eismn	Nwcmb	Bosch	D	4	143½	37x5r	QD	Chassis	7000	....	....	....	....	....
SINGER																			
17	6-4 x5½	38.4	Bosch	Rafid	Wsths	DD	4	138	35x5	QD	3800	†3800	3800	....	....	4750	....
STANDARD																			
8	8-3½x5	33.8	Splitdf	Zenith	Apleo	D	3	127	35x4½	....	†1950	....	2000	....	2500	3500	....
STANLEY																			
Steamer	2-4 x5	....	....	....	....	..	.	130	35x4½	SS	‡2200	2200	2300	....	....	....	....
STEARNS																			
SK14	4-3½x5½	22.5	Remy	Schebler	Wsths	DD	3	119	34x4	SS	†1785	1785	1925	2300	2385	3200	....
SK8	8-3½x5	33.8	Remy	Rafid	Wsths	DD	3	125	35x4½	SS	‡2575	....	2575	3200	....	3875	....
STEPHENS																			
Salient Six	6-3½x4½	25.3	Delco	Stmbg	Delco	P	3	117½	32x4	....	‡1485	1485	....	....	....	....	....
STUDEBAKER																			
SF-4-40	4-3½x5	24.2	Remy	Schebler	Wagner	C	3	112	34x4	SS	‡1050	....	1050	....	....	....	....
ED-6-50	6-3½x5	36.4	Remy	Schebler	Wagner	C	3	122	35x4½	SS	‡1385	....	1385	1850	1850	2750	....
STUTZ																			
S	4-4½x6	30.6	Bosch	Stmbg	Remy	C	3	130	32x4½	SS	2550	†2650	*2750	....	....	....	....
S.Bearcat	4-4½x6	30.6	Bosch	Stmbg	Remy	C	3	120	32x4½	SS	2550	....	....	....	....	....	....
SUN																			
17	6-3½x5	23.4	Remy	Rafid	Remy	DP	3	116	34x4	SS	†1345	1345	1345	....	....	....	....
VELIE																			
38	6-3½x4½	25.3	Remy	Rafid	Remy	DP	3	115	32x4	SS	1265	1265	†1265	....	1835	....	....
39	6-3½x5½	29.4	Remy	Rafid	Remy	DP	4	124	33x4½	SS	....	....	1595	....	....	....	....
WESTCOTT																			
S-18	6-3½x5½	29.4	Delco	Rafid	Delco	DD	3	125	35x4½	SS	†1890	1940	1940	2790	2790	....	....
WHITE																			
16-Valve	4-4½x5½	28.9	Bosch	Own	L.N.	P	4	{124½ 137½	33x4½ 37x5	QD	†4600	....	4600	5650	5650	5800	....
WILLYS-KNIGHT																			
88-4	4-4½x4½	27.2	Conn	Tltsn	A-Lite	C	3	121	34x4½	SS	....	....	1485	....	2185	2285	....
88-8	8-3¾x4	36.4	Remy	Zenith	A-Lite	C	3	125	34x4½	SS	....	....	1985	....	2685	2785	....
WILLYS																			
89-6	6-3½x5½	29.4	Conn	Tltsn	A-Lite	C	3	120	33x4½	SS	†1320	....	1320	....	2000	....	....
WINTON																			
33	6-3½x5½	33.7	Bosch	Rafid	Bijur	DD	4	128	36x4½	QD	2950	2950	3000	3865	4165	4165	....
48	6-4½x5½	48.6	Bosch	Rafid	Bijur	DD	4	138	37x5	QD	3500	3500	3500	4500	4750	4750	....

*6-passenger. †4-passenger. ‡3-passenger.

ABBREVIATIONS—"A-C" Allis-Chalmers, "L-N" Leece-Neville, "Tltsn" Tillottson, "Atzr" Atomizer, "Rech" Reichenbach, "DD" Dry Disk, "CU" Control Unit, "DP" Dry Plate, "G" Gearless, "F" Friction, "QDR" Quick Detachable Reversible, "R & M" Robbins & Myers. NOTE—37½x5½r means that the rear tires are 37x5½, and the front are smaller. Detachable top, 300x, means $300 extra.

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Studebaker to Maintain 4 Per Cent Dividend

SOUTH BEND, IND., Oct. 25—At the next monthly meeting of the board of directors of the Studebaker Corp. action will be taken on the quarterly dividends, and it is expected that the present regular 4 per cent rate will be maintained. It is stated that the Studebaker Corp. in the year to Dec. 31 will earn for its stockholders between $5,000,000 and $6,000,000, equal to between 14 and 17 per cent on the $30,000,000 common stock, after allowing for preferred dividends. This compares with $8,611,245 in 1916. The Studebaker Corp. has received from the United States Government about $6,000,000 of war business. The orders are for vehicles, artillery wheels, saddlery, harness, etc., and will yield the corporation a fair profit.

Motor Car Securities Quotations

	Oct. 27, 1917 Bid	Asked
*Ajax Rubber Co.	58	62
*J. I. Case T. M. Co. pfd.	..	81
Chalmers Motor Car Co. com.	3	6
Chalmers Motor Car pfd.	..	..
*Chandler Motor Co.	71	72
Chevrolet Motor Co.	74	77
*Fisher Body Corp. com.	25	35
*Fisher Body Corp. pfd.	78	82
Fisk Rubber Co. com.	50	60
Fisk Rubber Co. 1st pfd.	100	105
Fisk Rubber Co. 2nd pfd.	85	95
Firestone Tire & Rubber Co. com.	97	100
Firestone Tire & Rubber Co. pfd.	98	101
*General Motors Co. com.	93	95
*General Motors Co. pfd.	75	77
*B. F. Goodrich Co. com.	40	42
*B. F. Goodrich Co. pfd.	99	103
Goodyear Tire & Rubber Co. com.	159	162
Goodyear Tire & Rubber Co. pfd.	99	102
Grant Motor Car Corp.	81½	82½
Hupp Motor Car Corp. com.	2¼	3
Hupp Motor Car Corp. pfd.	82	88
International Motor Co. com.	9	11
International Motor Co. 1st pfd.	..	50
International Motor Co. 2nd pfd.	15	30
*Kelly-Springfield Tire Co. com.	44½	46
*Kelly-Springfield Tire Co. 1st pfd	85	90½
*Lee Rubber & Tire Corp.	15½	16½
*Maxwell Motor Co., Inc. com.	31½	33
*Maxwell Motor Co., Inc. 1st pfd.	64	66
*Maxwell Motor Co., Inc. 2nd pfd.	18	20
Miller Rubber Co. com.	134	137
Miller Rubber Co. pfd.	98	101
Packard Motor Car Co. com.	112	120
Packard Motor Car Co. pfd.	94	97
Paige-Detroit Motor Car Co.	20	23
Peerless Truck & Motor Corp.	10	13
Portage Rubber Co. com.	118	121
Regal Motor Car Co. pfd.	10	20
†Reo Motor Car Co.	22	23
*Saxon Motor Car Corp.	7	9
Springfield Body Corp. com.	..	..
Springfield Body Corp. pfd.	..	..
Standard Motor Construction Co.	8	9
Standard Parts Co.	..	78
*Stewart-Warner Speed. Corp.	58	60
*Studebaker Corp. com.	38½	40
*Studebaker Corp. pfd.	87	96
Swinehart Tire & Rubber Co.	35	45
United Motors Corp.	21	21½
*U. S. Rubber Co. com.	58	61
*U. S. Rubber Co. pfd.	100½	102
*White Motor Co.	38½	40
*Willys-Overland Co. com.	22	23
*Willys-Overland Co. pfd.	..	85

*At close Oct. 27, 1917. Listed N. Y. Stock Exchange. †Par value $10.

Coming—THE SHOW CALENDAR—*Events*

Shows

Des Moines, Ia.	First Annual Closed Car Show, Des Moines Automobile Dealers' Assn. Ross Clemmons, Mgr.	Oct. 29-Nov. 3
Los Angeles, Cal.	Motor Car Dealers' Assn., Sunday Tabernacle. J. S. Conwell, Mgr.	Billy...Nov. 12-17
Denver, Col.	Automobile Trades Assn., Show Committee, Auditorium. G. A. Wahlgreen, Mgr.	Nov. 12-18
Akron, O.	Akron Auto Show Assn., Auditorium Armory. C. G. Armstrong, Mgr.	Dec. 3-8 1918
Ft. Dodge, Ia.	Ft. Dodge Auto Dealers' Assn. G. W. Tremain, Mgr.	January
New York, N. Y.	Salon, Automobile Salon, Inc., Astor Ballroom. John R. Eustis, Mgr.	Jan. 2-9
New York, N. Y.	Eighteenth Annual, Automobile Chamber of Commerce, Grand Central Palace.	Jan. 5-12
Kansas City, Mo.	Third Annual Tractor Show.	Jan. 11-16
Washington, D. C.	Carnival and Open House Week. Automobile Trade Assn. of Washington.	Jan. 11-18
Providence, R. I.	R. I. Licensed Auto Dealers' Assn., State Armonry. Percival S Clark, Mgr.	Jan. 11-19
Philadelphia, Pa.	Seventeenth Annual, Philadelphia Auto. Trade Assn., Commercial Museum Bldg.	Jan. 11-19
Milwaukee, Wis.	Milwaukee Automobile Trades, Inc. Auditorium. Bart J. Ruddle, Mgr.	Jan. 18-24
New York, N. Y.	Motor Boat Show, Grand Central Palace, National Assn. of Engine & Boat Manufacturers.	Jan. 19-26
Montreal, Can.	National Motor Show of Eastern Canada. Montreal Automobile Trade Assn.	Jan. 19-26
Cleveland, O.	Seventeenth Annual, Cleveland Automobile Show Co., Wigmore Coliseum. Fred H. Caley, Mgr.	Jan. 19-27
Scranton, Pa.	Scranton Motor Trades Assn., Armory. Hugh B. Andrews, Mgr.	Jan. 21-26
York, Pa.	York Auto Dealers' Assn., Queen St. Tabernacle. T. F. Pfeiffer, Sec.	Jan. 21-26
Portland, Ore.	Motor Car Dealers' Assn., Armory. Jos. M. Rieg, Mgr.	Jan. 21-26
Mifflintown, Pa.	Automobile Trade Assn., Valley Stream Auditorium.	Jan. 22-26
Allentown, Pa.	Lehigh Auto. Trade Assn., Traylor Motor Co.'s Garage. P. W. Leisering, Publicity Mgr.	Jan. 23-28
Chicago, Ill.	Eighteenth Annual, Coliseum and Armory, National Automobile Chamber of Commerce.	Jan. 26-Feb. 2
Harrisburg, Pa.	Capital City Motor Dealers' Assn. J. Clyde Myton, Mgr.	Jan. 26-Feb. 2
Chicago, Ill.	Salon, Elizabethan Room of Congress Hotel.	Jan. 26-Feb. 2
Manchester, N. H.	Academy. Couture Bros.	Jan. 28-Feb. 2
Peoria, Ill.	Peoria Auto and Accessories Dealers' Assn. W. O. Ireland, Mgr.	February
Minneapolis, Minn.	Minneapolis Auto. Trade Assn. Walter B. Wilmot, Mgr.	Feb 2-9
Kansas City, Mo.	Kansas City Motor Car Dealers' Assn., E. E. Peake, Mgr.	Feb. 9-16
St. Louis, Mo.	St. Louis Auto Mnfrs. & Dealers' Assn. Robert E. Lee, Mgr.	Feb. 11-16
Newark, N. J.	N. J. Auto Exhibition Co., First Regiment Armory. Claude E. Holgate, Mgr.	Feb. 16-23
San Francisco, Cal.	San Francisco Dealers' Assn., Exposition Auditorium. G. A. Wahlgreen, Mgr.	Feb. 16-24
Waterbury, Conn.	United Shows Co.	Feb. 18-23
Des Moines, Ia.	Des Moines Automobile Dealers' Assn., Coliseum. C. G. Van Vliet & Dean Schooler, Mgrs.	Feb. 18-23
Syracuse, N. Y.	Syracuse Automobile Dealers' Assn., State Armory. Harry T. Gardner, Mgr.	Feb. 18-23
Grand Rapids, Mich.	Automobile Business Assn. Klingman Building. Ernest T Conlon, Mgr.	Feb. 18-23
Springfield, O.	Springfield Auto Trades Assn. Memorial Hall. C. S. Burke, Mgr.	Feb. 18-23
Pittsfield, Mass.	State Guard, State Armory. James J. Callagan, Mgr.	Feb. 18-23
So. Bethlehem, Pa.	Fourth Annual (cars 18-23; trucks 25-27), Coliseum. J. L. Elliot, Mgr.	Feb. 18-27
Brooklyn, N. Y.	Brooklyn Motor Vehicle Dealers' Assn., Twenty-third Regiment Armory. I. C. Kirkham, Treas.	Feb. 22-Mar. 9
	Commercial Vehicles.	Feb. 2-9
Cedar Rapids, Ia.	Cedar Rapids Auto. Trade Assn. Auditorium.	March
Kalamazoo, Mich.	Kalamazoo Automobile Dealers' Assn., Armory.	March
Omaha, Neb.	Omaha Auto. Trade Assn., Auditorium. Clark G. Powell, Mgr.	Feb. 23-Mar. 2
Boston	Boston Automobile Dealers' Association, Mechanics Building. Chester I. Campbell, Mgr.	Mar. 2-9
San Francisco, Cal.	Motor Truck Dealers of San Francisco, Auditorium. Ivan R. Gates.	Mar. 19-24
Trenton, N. J.	Trenton Auto Trade Assn., Second Regiment Armory. John L. Brock, Mgr.	Mar 20-23
Stockton, Cal.	San Joaquin Auto Trade Assn. Samuel S. Cohn, Mgr.	Apr. 9-13
Springfield, Mass.	Auditorium Building. United Shows Co.	Dec. 3-8 1918

General and Racing

New York	Convention, National Assn. of Auto Accessory Jobbers, Hotel Astor.	Feb 11-16

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THE WINTER PROFIT-MAKER

Curtain Windows that make any car an all-season car—enable your customers to motor comfortably all winter long—crowd your shop *now* with top work!

Experiences of automobile men in many cities prove that Johnston Bevel Plate Glass Curtain Windows solve the top problem, solve the all-year car problem, solve the used car problem—assure the automobile dealer brisk business and good profits *the winter through.*

Why are cars laid up in winter? Because the tops are unlighted and gloomy, or fitted with dingy, unsightly, punched-out windows of celluloid that leave the car cold and drafty.

Then let car owners know you can equip flexible tops and curtains with windows that in no way hinder folding, are crystal-clear, unbreakable, permanent as those of a limousine—and made in a score of distinctive styles! Seventy thousand are in use—leading car manufacturers have made them standard equipment—alert dealers and trim-shops featuring this "glass of fashion" have increased their sales and profits 200% to 300%.

Why not you? Why let business sag in the winter season when you can fit out hundreds of cars for all-season use and thus fill the dull months with trade? Write or wire your jobber for Johnston Curtain Window styles and prices—today. And inquire on your letterhead for our newest Top Style Sheet "W."

JOHNSTON CURTAIN WINDOWS OF BEVEL PLATE GLASS-FOR OPEN CARS

Manufactured by the Wm. R. Johnston Mfg. Co., 359 East Ohio Street, Chicago

Johnston Bevel Plate Glass Curtain Windows are ingeniously cushioned in wood, and rimmed with nickel, involving a novel principle of construction fully covered by U. S. and foreign patents. Our oval trademark on every rim—a protection and a friendly warning.

JOHNSTON
PATENTED

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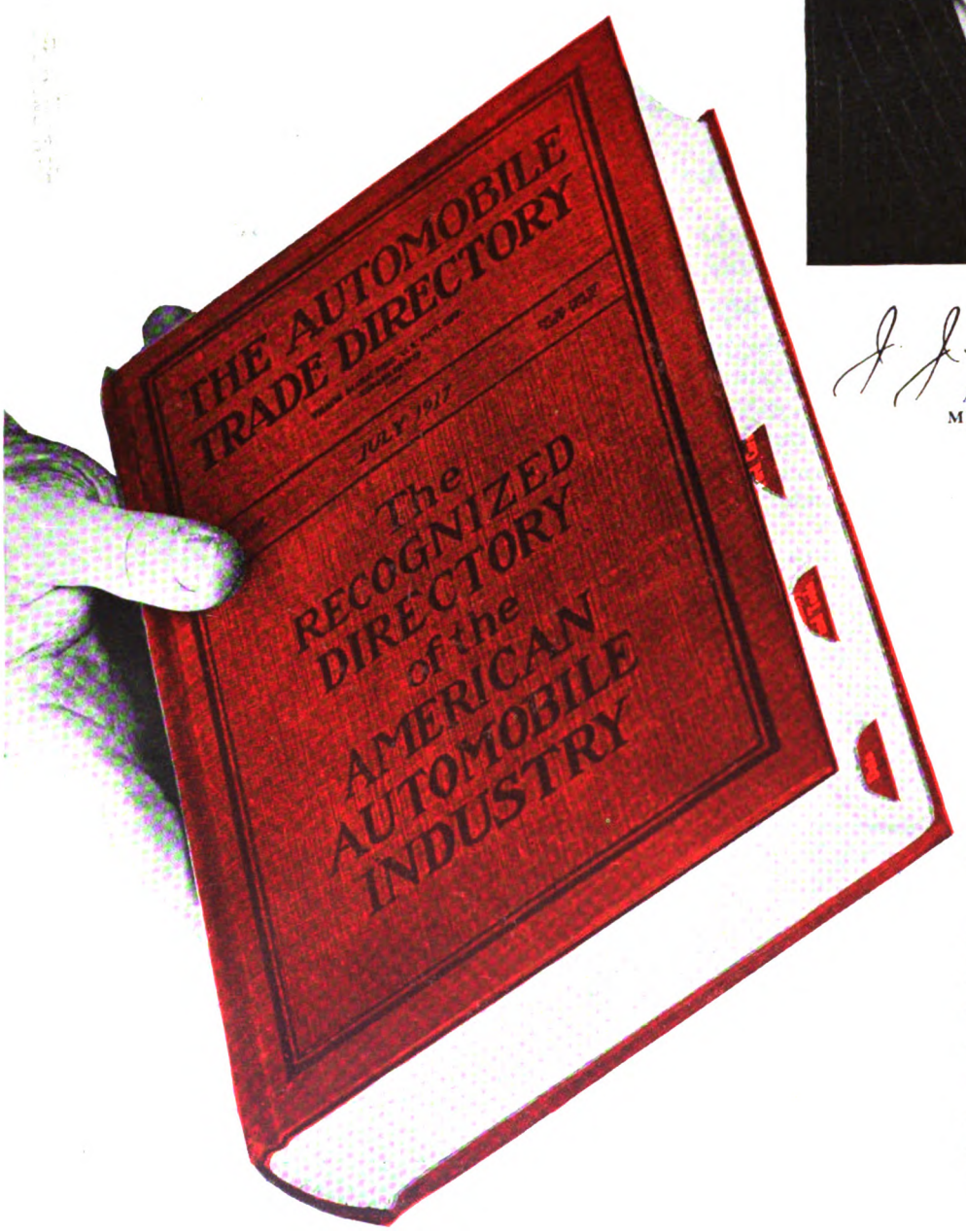
MANAGER OF THE AUTOMOBILE DEPARTMENT OF THE WORLD'S LARGEST RETAIL STORE

"It has never failed me in locating the manufacturers of different automobile supplies. What more could I say of The Automobile Trade Directory?"



J. J. Parmenter

MANAGER
AUTOMOBILE DEPARTMENT
MARSHALL FIELD & COMPANY
CHICAGO, ILL.



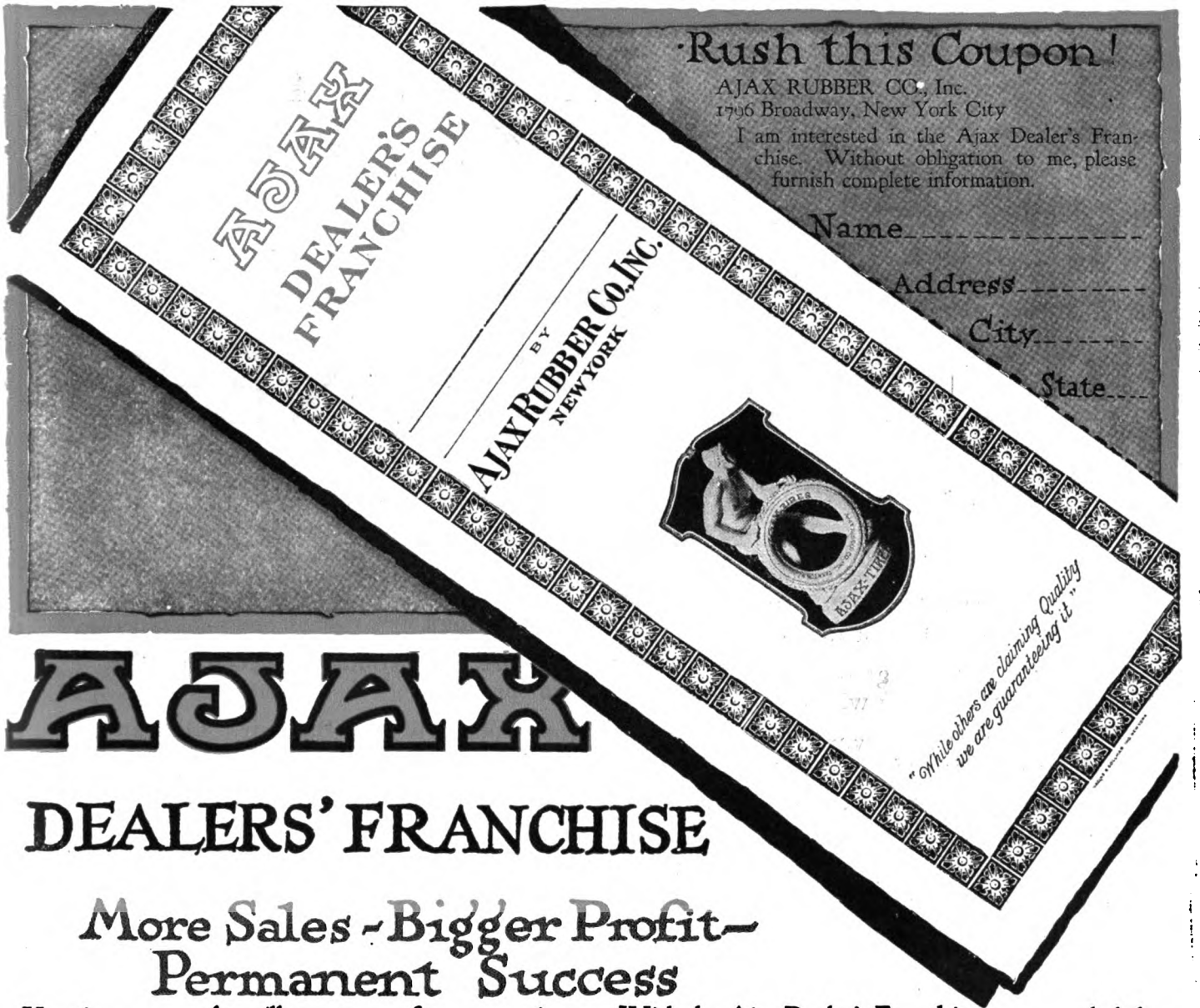
"IT HANGS EVERYWHERE"

A Thousand Catalogs in One

Suppose a customer asks for an "Old Sol." Turn to "Lights" in the "Red Book." You'll find the trademarked name—the manufacturers name—all information.

THE AUTOMOBILE TRADE DIRECTORY, ROBERT WOLFERS, President, 243 WEST 39th ST., NEW YORK CITY

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AJAX

DEALERS' FRANCHISE

More Sales - Bigger Profit— Permanent Success

Here is announced a still greater profit opportunity for live tire dealers. The Ajax Dealer's Franchise opens the way for big, new, permanent business. It brings special, money-making advantages and sales co-operation that help you to leadership in your locality now and for all time.

The Ajax Dealer's Franchise is backed by the in-built quality which enabled us to give Ajax Tires the first

Guarantee in Writing 5000 Miles

It carries the *special* selling advantage of Ajax Road King Tire—a monarch in quality, a democrat in service—the utmost in tire value—for the motorist—for the dealer.

With the Ajax Dealer's Franchise are extended the benefits of our great 1918 sales drives—hundreds of thousands of dollars in National advertising—full pages in the Saturday Evening Post and other big leading publications, to build a line of sales for every Ajax Franchise Dealer.

These permanent advantages and profit opportunities of Ajax Dealer's Franchise are too many and varied to be described here. *Get all the facts!*

Your Territory May Be Open

Keen dealers are quick to seize this greatest of profit opportunities. Perhaps your locality is open. Investigate the Ajax Dealer's Franchise.

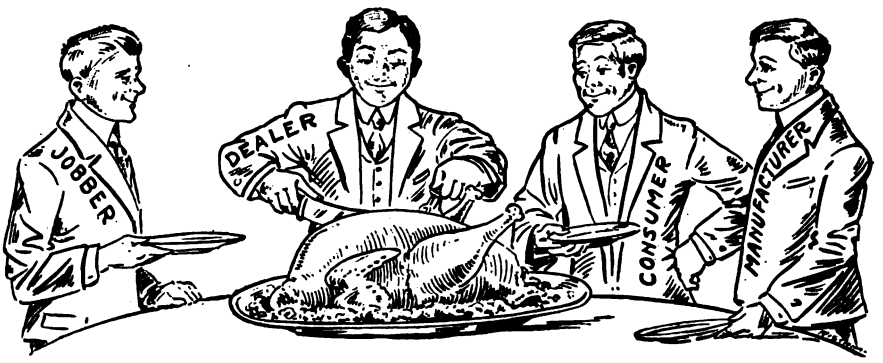
WRITE OR WIRE
The coupon above will bring you the details of the Ajax Dealer's Franchise. But, to save valuable time, we suggest you *Wire Collect!*

Ajax Rubber Company, Inc.
1796 Broadway
New York City

97% OWNERS' CHOICE
Remember — Ajax Tires are 97% Owners' Choice. That means 97% of the tremendous Ajax output is selected by individual motorists to replace other tires that came on their cars.

While Others are Claiming Quality. We are Guaranteeing It

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WINTER BUSINESS

There's Enough for All and the Consumer Gets the White Meat

What are you doing toward your Thanksgiving Feast? When you were a boy you used to plan for it and you wanted all the trimmings.

The Trimmings to the Winter business feast are the profitable specialties that you can sell, upon which you make a substantial profit.

The Overhaul work which is also your opportunity to sell Batteries, Oils and Greases, Parts and Accessories, is the turkey end of the dinner.

Have you made your plans so that there will be nothing lacking to make the Festival a complete success?

You know that your mother, in those boyhood days of yours, didn't sit down and wait for someone to prepare the dinner—she was on the job and the dinner was a success. She has set an example that will be good for you to follow.

Your Jobber is Ready to Help You Put it Over Strong

Don't be backward about asking for Co-operation. Your Jobber and his Salesmen—the Manufacturer and his Organization are only waiting for the word from you. Cash in on the Advertising the manufacturers are doing by doing local advertising to connect your place of business up as the local distributor of these Winter Comfort Items.

Do it now.

"Winter Business—Cold Weather Made Profitable."

MEMBER

National Association of Automobile Accessory Jobbers

WM. WEBSTER, Commissioner

CITY HALL SQUARE BUILDING CHICAGO, ILL.

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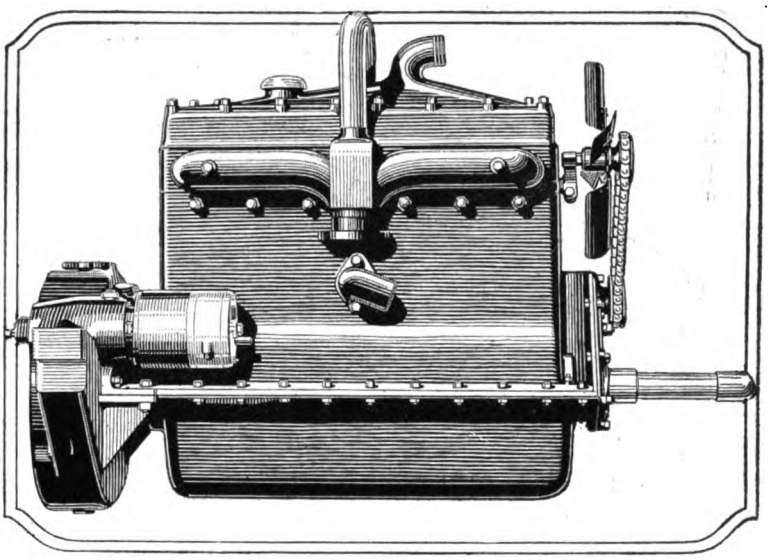
STEPHENS *Salient Six*

GROUNDED ON FACTS

Stephens Salient Six owners are getting **actual** economy out of gasoline. In every-day give-and-take service they are recording a constant average of 14 to 18 miles on the gallon. These are **actual** figures and are not based on stunt performances or boulevard tests.

The Stephens Salient Six engine is economical because it is unusually powerful for its size. As the power performance in an engine of given size is made to increase by perfection of design, the gasoline consumption is made to decrease simply because it burns all the gasoline and takes less gasoline to give the same amount of energy to the pistons.

Power loss can come through poor bearings, poor lubrication, unbalanced reciprocating parts and, most of all, through loss of heat units from the exploding fuel.



Exhaust Side of Engine

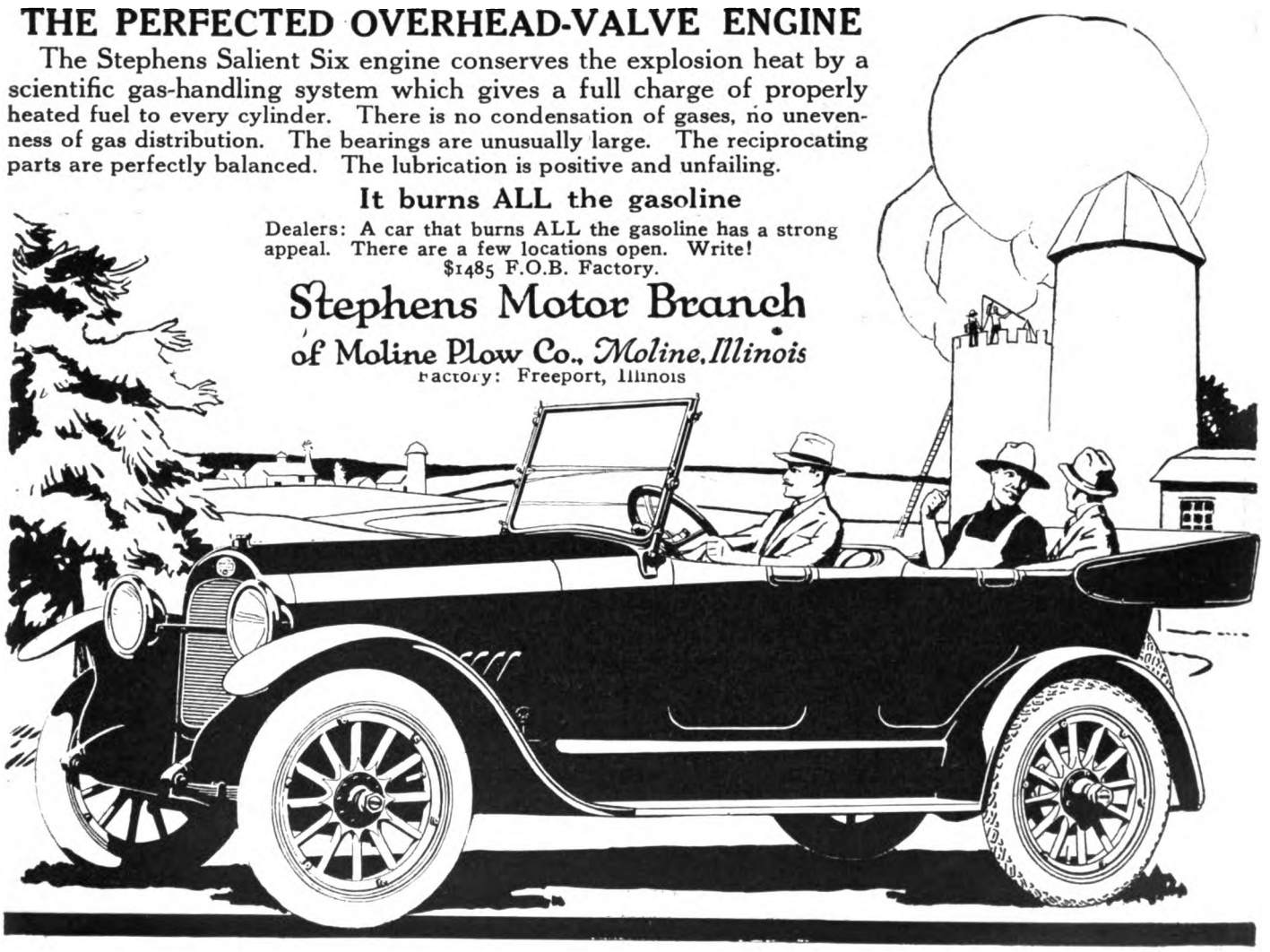
THE PERFECTED OVERHEAD-VALVE ENGINE

The Stephens Salient Six engine conserves the explosion heat by a scientific gas-handling system which gives a full charge of properly heated fuel to every cylinder. There is no condensation of gases, no unevenness of gas distribution. The bearings are unusually large. The reciprocating parts are perfectly balanced. The lubrication is positive and unfailing.

It burns ALL the gasoline

Dealers: A car that burns ALL the gasoline has a strong appeal. There are a few locations open. Write!
$1485 F.O.B. Factory.

Stephens Motor Branch
of Moline Plow Co., *Moline, Illinois*
Factory: Freeport, Illinois



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Behind the Products— the Pennsylvania Policy

SUCH quality as goes into Vacuum Cup Tires and "Ton Tested" Tubes would be impossible without the Pennsylvania Policy behind them.
The cardinal features of our policy are to give the actual user-buyer:

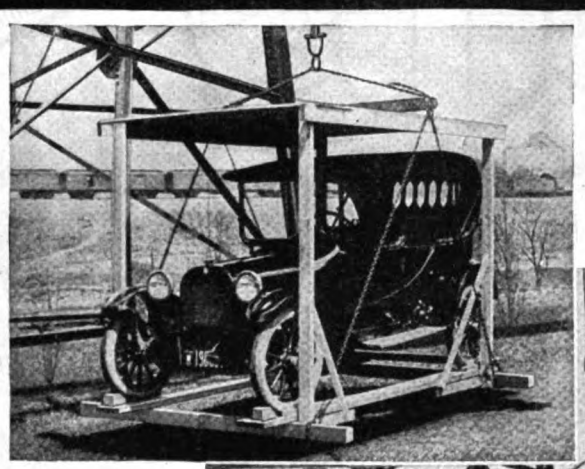
FIRST—The utmost quality that men, machines, and materials, can be made to produce;

SECOND—The most liberal price schedules that the most highly organized and best equipped factory in the industry can make possible through manufacturing economy and efficiency; and,

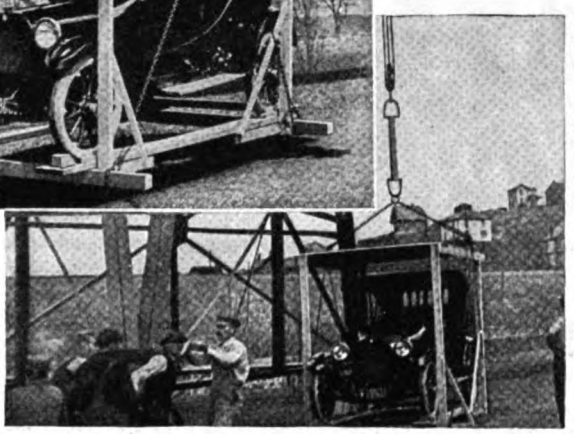
THIRD—To give Pennsylvania dealers a Selling Plan that yields the greatest protection and profits.

For we firmly believe that one conscientious, interested, service-giving dealer is better than two "just dealers," and therefore grant the most liberal arrangements and profits in order to secure the best concerns to sell Pennsylvania products.

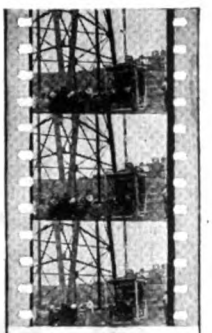
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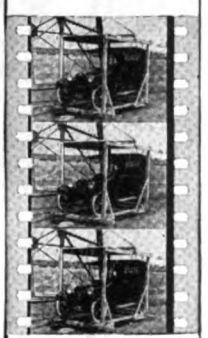
Enlargement of actual "movie" picture showing car and platform—total weight, 2,990 pounds—suspended in air by Tube.



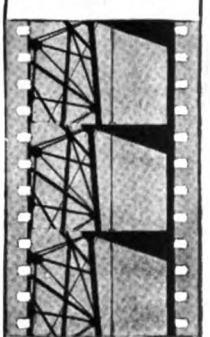
Enlargement showing tube adjusted ready for test.



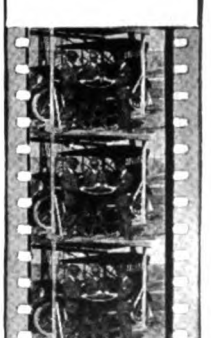
Showing tube attached to tackle and car platform ready for test.



Car and platform—total weight, 2,990 pounds—lifted clear from ground by Tube.



The Tube at full stretch lifting car and platform.



Jeannette Chamber of Commerce Committee examining Tube after test and pronouncing it absolutely unharmed.

The New *Pennsylvania* AUTO TUBE

"TON TESTED"

1½ tons per square inch *guaranteed* tensile strength! The Tube that held suspended in air a touring car and scaffold weighing *2990 pounds* and expanded to the remarkable circumference of *5 feet.*

(Actual moving pictures were taken of both these tests.)

We're taking pages and spreads in colors in the Saturday Evening Post, Literary Digest, and other media of nation-wide circulation to tell Tire and Tube users all over the country the remarkable wear-resisting, non-checking, non-cracking qualities of "Ton Tested" Tubes, and the *guaranteed* mileage, service, and non-skid efficiency of Vacuum Cup Tires.

There already exists a tremendous demand for Vacuum Cup Tires, and this demand is rapidly being duplicated for "Ton Tested" Tubes.

You'll want to get in on this very profitable business. Write us *TODAY* for the full particulars of our generous Selling Plan and Protective Policy.

PENNSYLVANIA RUBBER CO. **Jeannette, Pa.**

Direct factory branches and Service Agencies throughout the United States and Canada

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CHICAGO
Big Business Endorses

TUNGSTEN
TRADE MARK REGISTERED
SPARK PLUG
Always on the job



Big firms noted for their buying efficiency are using Tungsten plugs because they give longer and more efficient service, and while their first cost is higher they are cheaper in the long run.

Chicago Gas, Light & Coke Co., Sultzer Baking Co., Chicago Telephone Co., Arbuckle Bros., The Brunswick-Balke-Collender Co., Kewel Tea Co., Inc.; Jas. S. Kirk & Co., Loose-Wiles Biscuit Co., Lyon & Healy, Mandel Bros., Oscar Meyer, Albert Pick & Co. and Schulze Baking Co. are among the leaders in Chicago big business, whose motor trucks are equipped with TUNGSTEN spark plugs.

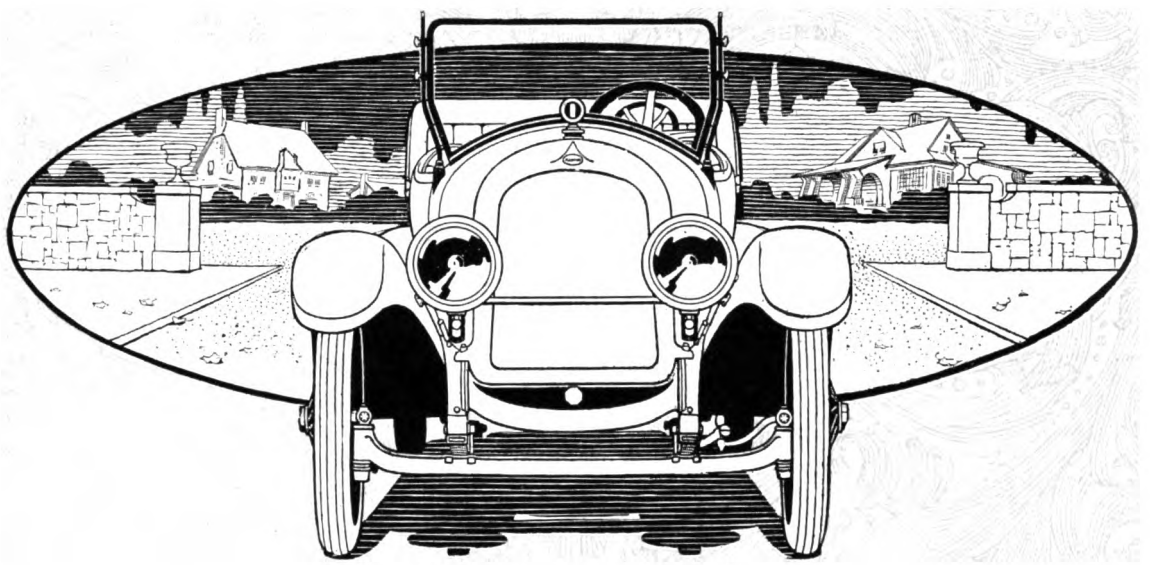
Let us tell you more about Tungstens and the policy that will show you greater profits.

TUNGSTEN MFG. COMPANY
Marshalltown, Iowa

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MARMON 34

Advanced Engineering



Light-Weight Yet Long Wheelbase

MARMON light-weight results from engineering achievements—not from shortening the wheelbase. This car has a wheelbase 136 inches long. And although it weighs 1100 pounds less than other cars of the size and power, this weight has been saved without lessening the strength of a single part in relation to the work it must do.

Hundreds of pounds were removed by using aluminum for the motor, the body, and the fenders.

More weight was cut by eliminating secondary parts. In the Marmon design all work is performed by structural parts. Even the steel running boards serve to support the frame.

They are riveted to it and form an integral part of it.

Thus hangers and fasteners are dispensed with. In dozens of scientific ways, construction is simplified and weight is reduced.

So comes this big light car that gives between 50 and 75 percent more gasoline mileage and 40 to 50 percent more service from tires.

Moreover, the Marmon excels the heavier cars in roadability. Low center of gravity, minimum unsprung weight, long wheelbase, and almost perfect balance combine to produce riding qualities that cars of old-style build can't match regardless of weight.

An hour's demonstration over country roads will reveal why Marmon principles have made this car mechanically the ruler in motordom.

136-Inch Wheelbase—1100 pounds lighter.

NORDYKE & MARMON COMPANY

Established 1851 : INDIANAPOLIS

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MARMON 34

Advanced Engineering

The Car that Makes any Territory Profitable

OUT in the open where men want plenty of speed and power, and a car that tracks true and holds the road regardless, Marmon dealers are finding a ready-made market.

Whether East or West, there are plenty of prosperous people in small communities as well as populous centers, who are ready to pay the price of a high-class car, provided it works as well in country roads as it does in city streets.

Consider, too, that the sale of one Marmon car is equal to the sale of four cars of the cheaper class. Moreover, a Marmon is sold with only a fraction of the effort both in the selling and in providing service afterward.

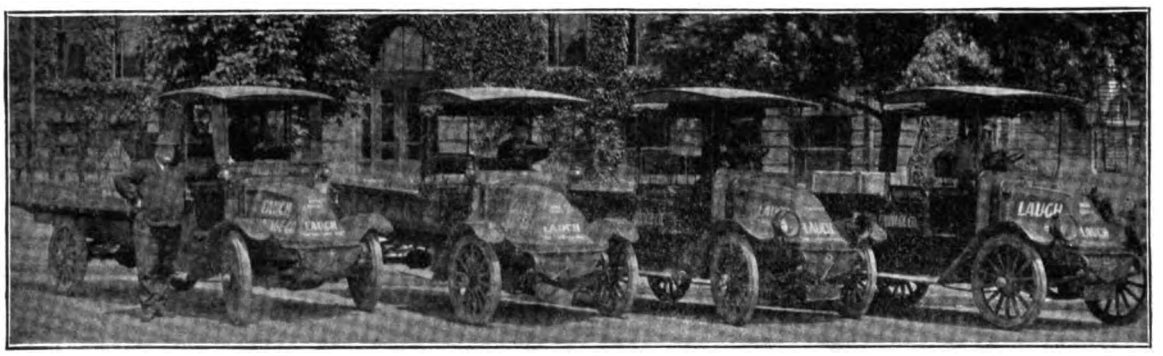
Though ever so small, each county is good for its quota of Marmon cars, and wherever we have an aggressive dealer he is proving up the average sales that we estimate *and more.*

136-Inch Wheelbase — 1100 pounds lighter than any comparable car.

NORDYKE & MARMON COMPANY

Established 1851 : INDIANAPOLIS

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1513 International Motor Trucks were sold in the United States in July —one month—for commercial purposes

We have now been selling motor trucks for ten years.

During that ten years our sales have shown a constant increase—a steady, conservative growth built entirely upon the quality of the product.

Every one of these 1513 sales was made because the purchaser knew of some other International Motor Truck that had made a satisfactory record with its owner. Many, of course, were repeat orders.

What better proof of satisfactory performance could any motor truck purchaser ask? What better guarantee that money paid for an International is wisely invested? What better argument for the sale of an International could a dealer offer?

There is a size and style for every business—1,500, 2,000, 3,000 or 4,000 pounds capacity, at $1,450 to $2,550 for the chassis (f. o. b. factory).

Owners know what International Service means. Men who use these trucks speak in the highest terms of the way we care for our customers. You can always refer a prospect to a user.

A contract for International Motor Trucks carries with it a complete, successful selling plan with exclusive features. Ask us to show you. A line to the address below will bring you the whole story.



International Harvester Company of America

CHICAGO (INCORPORATED) U. S. A.

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Tillotson
CARBURETOR

The air valve is to a carburetor what the heart is to the human body —a mighty important part. In either case if the action is "off," trouble is bound to result.

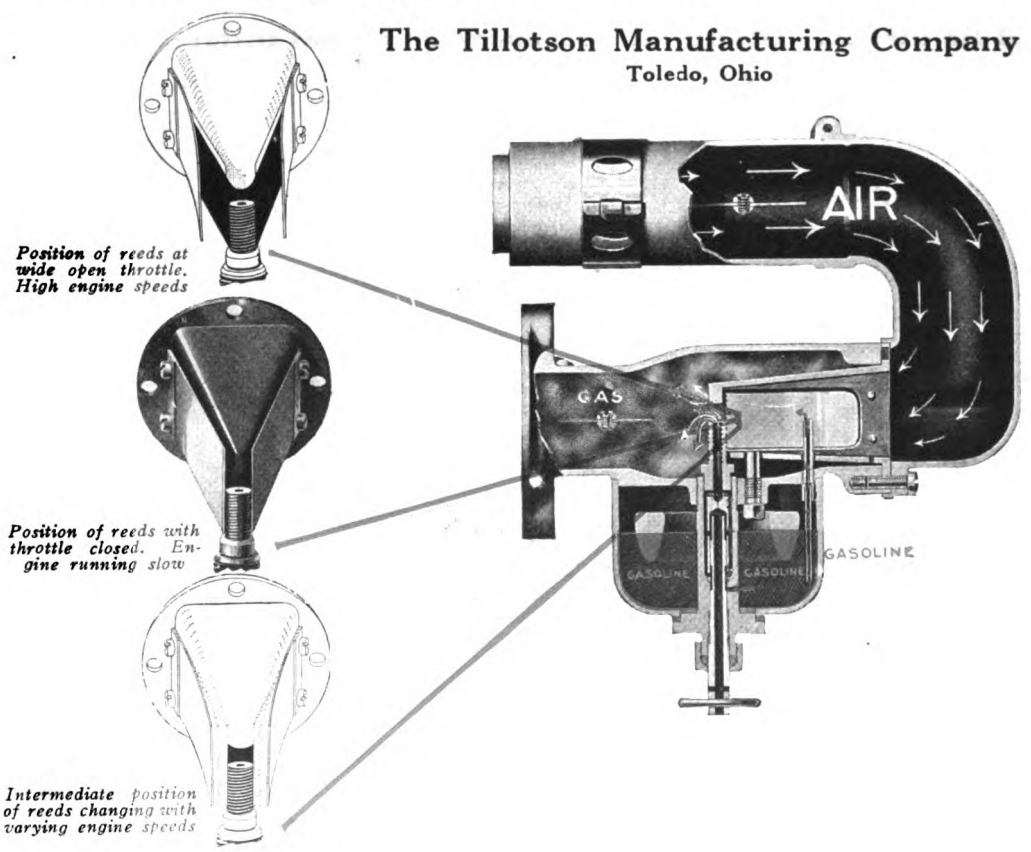
In the Tillotson Carburetor the action of the air valve is absolutely automatic.

Two flexible steel reeds open and close at the fuel supply nozzle, maintaining at all engine speeds the highest possible vacuum and greatest air velocity at this point.

The maximum partial vacuum that the pistons create with the engine running at high speed can only open these reeds a small portion of their elastic limit and their life is practically endless.

The air valve action is but one of the dependable features in the Tillotson design that appeals to automobile engineers and manufacturers.

The Tillotson Manufacturing Company
Toledo, Ohio

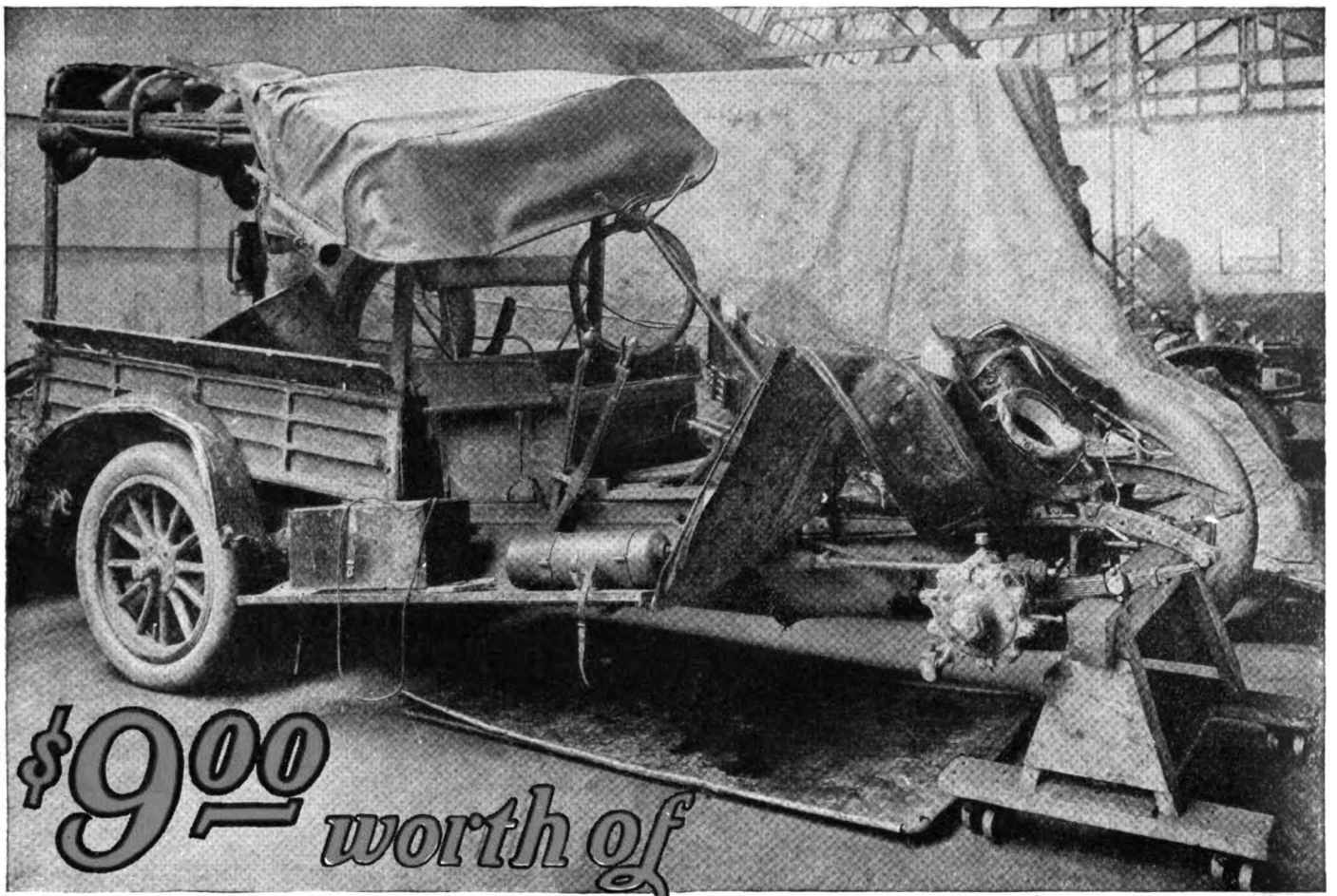


Position of reeds at wide open throttle. High engine speeds

Position of reeds with throttle closed. Engine running slow

Intermediate position of reeds changing with varying engine speeds

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GARCO BRAKE LINING

would have saved $675.00

The story of this wreck can be written in mighty few words—THE BRAKES DIDN'T HOLD.

Day after day—from early morning till late at night this truck was on the job—piling up big savings in time and money for the owner. Then one day the big emergency came. Constant use had worn the brake lining to shreds. And it failed.

Just a few dollars worth of GARCO Brake Lining would have kept this truck on the road and out of the repair shop. Protect your customers. Save them the big loss in time and money. Suggest relining the brakes whenever you think they need it. And recommend GARCO. It will back your good workmanship to the limit.

The big brake lining business comes easily to GARCO DEALERS. Car owners know that it is dependable. We furnish FREE to every dealer a line up of sure sales helps that bring the business surely—easily. Ask your jobber about them or write us direct.

GENERAL ASBESTOS & RUBBER CO., MAIN OFFICES and FACTORIES **Charleston, S. C.**

Branches and Complete Stock: 58 Warren Street, New York
106 West Lake Street, Chicago
311 Water Street, Pittsburgh

Pacific Coast Distributors, HUGHSON & MERTON, INC., 530 Golden Gate Avenue, San Francisco, Calif.
LOS ANGELES, 1229 South Olive Street PORTLAND, 326 Ankeny Avenue SEATTLE, 806 East Pike Street

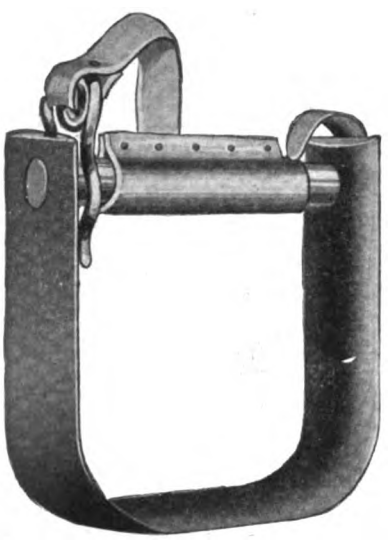
...anufacturers of As...os ...es in the World

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At Last !

A *Real* Truck-Tire Grip

Good-by to truck wire chains and other make-shift anti-skid devices that have "done for" so many solid tired trucks. Now you can give a truck sure traction under all conditions of road—snow, ice, mud-hole, or just slippery pavement—*without fear of chewing the tire to pieces and with absolute surety of traction.*



The half oval steel U-shaped tread fits over tire and rim both. A round bar lays across inside of the rim, leather-covered, to prevent marring. The whole device is locked in place with the spring pin shown. Notice how the rounded side of the half oval steel comes next to the tire.

EASYON SOLID TIRE GRIP

Here's a device that grips like a mud-hook, automatically taking the firmer hold where the road is softest—yet, due to the peculiar form of its tread members, it can neither bind nor chew the tire's edge, nor bite into its bearing surface.

It is attached quickly, without jacking up or other fuss—just as easily put on after you are "in a hole," has no projecting parts to catch on curbs, ruts and stones. Absolutely unbreakable.

PRICES—RETAIL

Size	Fits tires	Greatest Wid. rim	Price Each	Per set of 12
3½"	3" or 3½"	4"	$0.75	$9.00
4"	4"	4½"	.80	9.60
5"	4½" or 5"	5¾"	.90	10.80
6"	5½" or 6"	6¾"	1.00	12.00
7"	6½" or 7"	7¾"	1.10	13.20

Fits Single or Dual Tires On Rims of Following Widths.

8"	7" to 8¾"	wide	1.25	15.00
9"	8½" " 9¾"	"	1.35	16.20
10"	9½" " 11"	"	1.45	17.40
11"	10½" " 12"	"	1.60	19.20
12"	11½" " 13"	"	1.70	20.40
13"	12½" " 14"	"	1.80	21.60
14"	13½" " 15"	"	1.90	22.80
15"	14½" " 16"	"	2.00	24.00

Write for Prices and Territory

We want representative houses in all parts of the United States and Canada. There are liberal profits for live jobbers and dealers. Write for more information, terms and territory—TODAY.

WOODWORTH MFG. CORP.

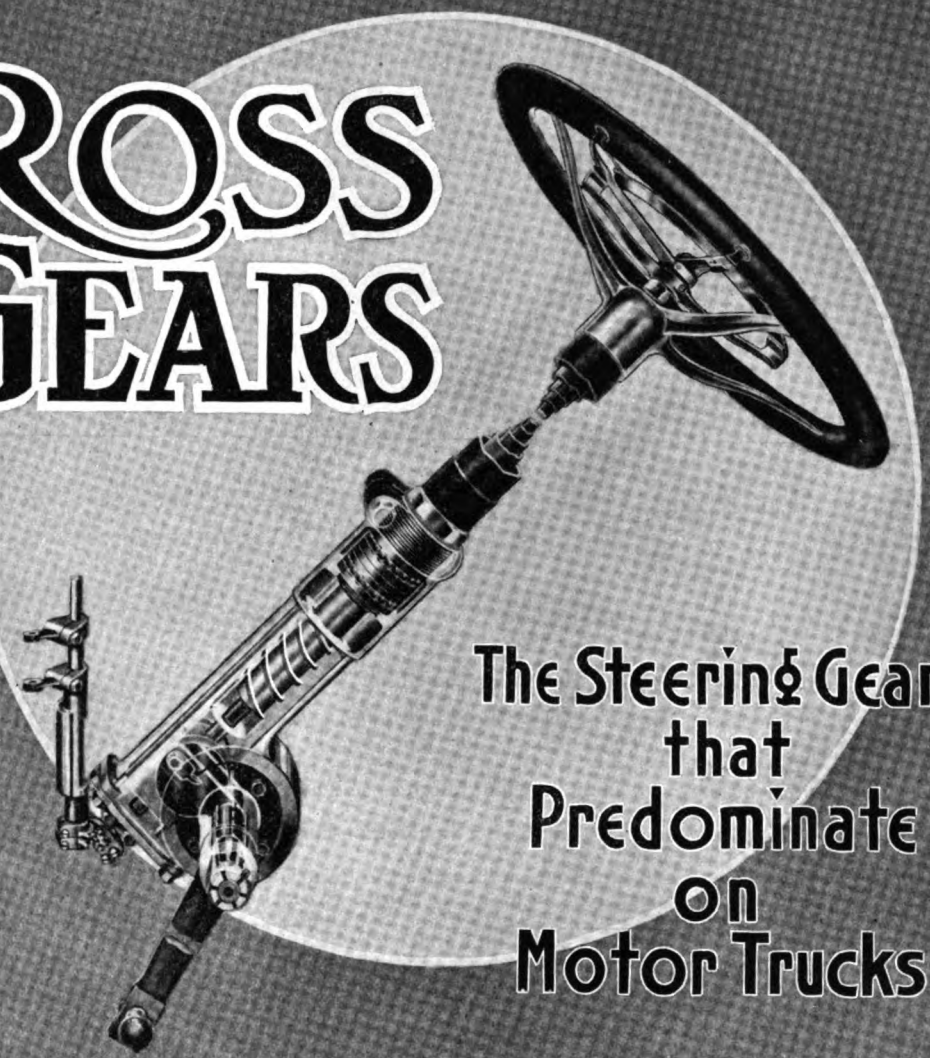
2005 Whirlpool Street **Niagara Falls, N. Y.**

(Factory for Canada: Niagara Falls, Ont.)

When writing advertisers please mention Motor World—It identifies you

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ROSS GEARS



The Steering Gears that Predominate on Motor Trucks

The Ross-Steered Truck

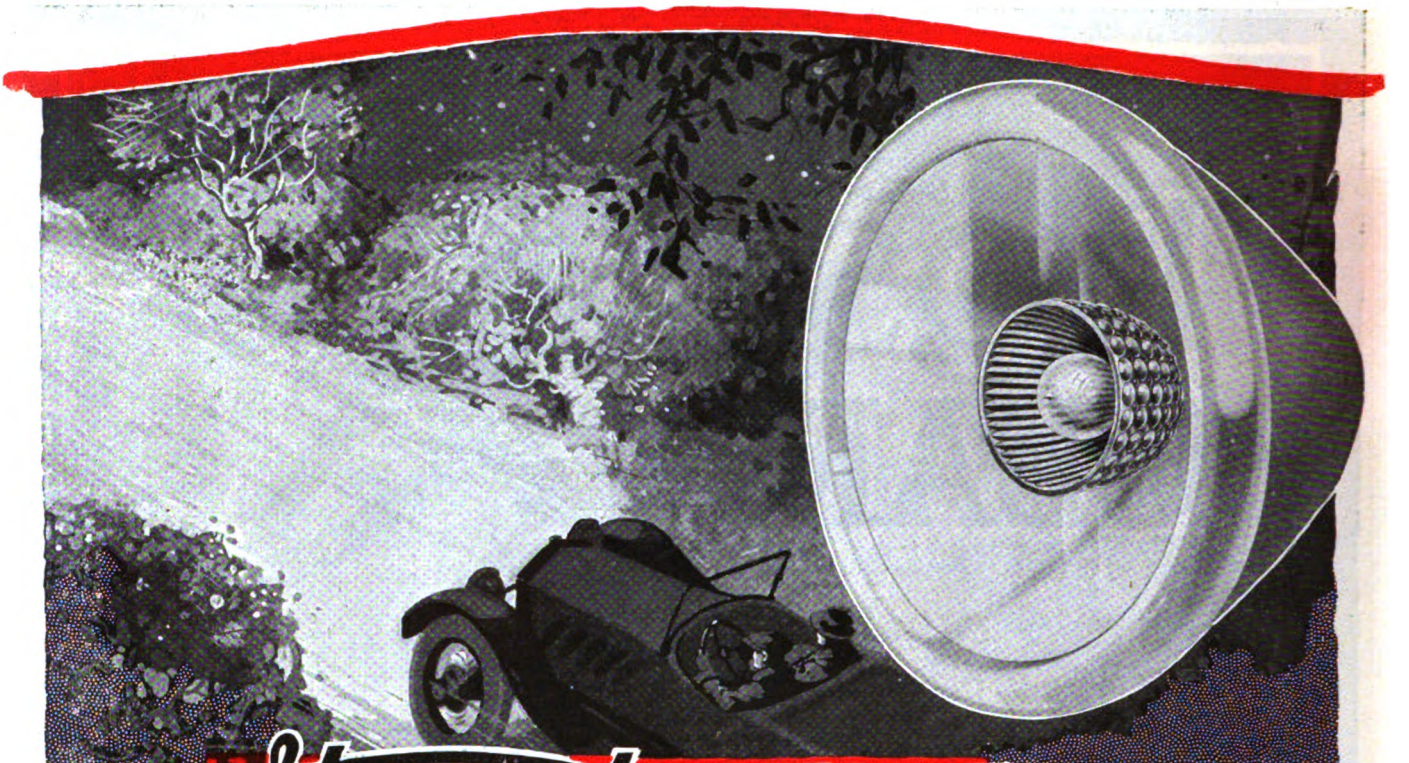
A Ross Steering Gear is practically conclusive proof of the merit of a motor truck, as it is reasonable to believe that the manufacturer, who has placed quality before price in the selection of the steering gear, has given the same careful consideration to the entire construction of the truck.

One hundred and fifteen motor truck manufacturers, representing considerably over half of the entire industry, are now giving to their customers the added assurance of safety, reliability and easy steering which Ross Gears guarantee.

Upon request we will be pleased to send our catalog and any special information desired

Ross Gear & Tool Company
725 Heath Street Lafayette, Indiana

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Stewart LENS

Provides a flood of light, which illumines the full width of the road including side ditches, and ***without glare.***

This is the big point in the Stewart Lens—complete and adequate illumination ***without glare.***

Gives complete illumination, because the light is diffused at its source (the light bulb) before it reaches the reflector.

Not only provides 100% light, but a light that is safer to drive by than ordinary headlights.

Because it gives no glare, the Stewart Lens can be used for city driving, with full lights turned on, with perfect safety and without danger of police censorship.

The design is based on scientific principles. Consists of a cup-shaped glass bowl which surrounds the light bulb. At the back it fits around the bulb stem. The forward end is open. The outer surface is covered with a series of curved elevations; the inner surface is ribbed.

When the lights are on, the Stewart Lens gives a rich, distinctive appearance to the headlight; adds to the appearance of the car.

The Stewart Lens will fit any car. Can be installed on any headlight. Produces the same perfectly diffused ***no-glare*** light on any size headlight. There is only one size; one model. Dealers and Jobbers can fill all orders from one stock item.

The price is $2.00 per pair, complete. At this popular price the Stewart Lens is within reach of every car owner.

Installation takes but a minute—remove front glass, take out lamp bulb, place the bulb stem through the back of the Stewart Lens and replace it in the headlight.

Stewart-Warner Speedometer Corporation
CHICAGO, U. S. A.

$2
PER PAIR

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Five Points for Dealers

THE STERLING MARK ON MOTOR ACCESSORIES

Gibson Quality

EVEN the *title-page* of our catalog carries a significant message for dealers. *Service—responsibility—satisfaction—permanence—opportunity*—these are the thoughts suggested on the *title-page* and reflected on *every other page* in this, the most valuable catalog we have ever issued!



1 Tremendous stocks and adequate facilities

2 19 years of service and experience

3 Responsibility and strength

4 A policy strictly and rigidly enforced

5 Your opportunity

Get this Catalog Today

Our Catalog, of approximately 400 pages, is virtually a "key" to the Gibson "storehouses." This Catalog (G-28) will be sent free to any legitimate accessory dealer or garage operator—anywhere! Write for your copy today—and let us put you on our permanent mailing list. Use the coupon now!

Sign and mail this Coupon today

THE GIBSON CO., *Indianapolis*

Send me your Catalog (G-28) containing full description and illustrations of your stocks and explanation of Gibson Service, Gibson Quality and Gibson Fair Treatment.

Add my name to your permanent mailing list—free.

Name.....

Street.....

City *and* State.....

M. W. 10-31-17

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What Good is Quality Unless it is Uniform Quality?

The ability of a bearing metal to resist frictional pull and wear is determined by the physical structure of that metal—by its degree of molecular cohesion.

Any change whatsoever—even the slightest—in the alloying of that metal, immediately alters its physical structure—its degree of molecular cohesion—its ability to resist frictional pull and wear.

Consider for a moment the problems confronting the foundryman. His pouring temperatures must always be the same. His cooling time must be the same. The relation of runner size to the thickness of the casting wall must always be the same. The relation of riser to casting wall must be the same. The moisture of his sand must be maintained uniform. And there are a hundred and more other little items which must be kept uniform if the castings from different heats are to be uniform with one another in their physical properties—in their degree of molecular cohesion.

In the alloying of any non-ferrous alloy the human element must necessarily play a large part. And the human element is never constant. We therefore do not claim, nor have we ever claimed, that Non-Gran Bearing Bronze is dead uniform—nothing is dead uniform.

But because we make but just this one alloy, Non-Gran Bearing Bronze, we have reduced the chance of human error to the minimum and the result is that Non-Gran is the closest approach to absolute uniformity of any bearing bronze made today in America.

If we were to make twenty alloys or should burden and confuse our men with the making of only just one other alloy we could not possibly hope to maintain in Non-Gran the degree of uniformity for which Non-Gran is now so famous.

When you are assured that you can get duplicates of a sample, it is worth your while to make a test. To make a test without assurance that you can duplicate results is merely a waste of time. Uniformity as shown by chemical analysis is not sufficient. You must have uniformity in the physical properties if you want uniformity in the ability of the metal to resist frictional pull and wear.

Non-Gran Bronze is the only bearing bronze made which is made by an organization of men making no other alloy.

American Bronze Corporation
Berwyn Pennsylvania

HIGH SPEED
NON-GRAN
BEARING BRONZE

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Permanent and Growing Profits!

DEALERS handling the Rennoc Worm Drive Truck and Truck Tractor are assured of immediate and continuous business—on a basis that means profits, satisfied customers and a permanently established trade.

THE DEMAND for a truck and tractor that is adaptable to the needs of inter-city hauling and the use of contractors is enormous.

RENNOC

2½ Ton
Worm Drive Trucks

8 Ton
Worm Drive Truck Tractor

NEW FLEETS are being organized every day. RENNOC dealers, with their big 8-ton tractor for inter-city and heavy duty work and their 2½-ton truck—made entirely of 3-ton units—are figuring strongly in the make-up of these new fleets.

NO NEED for RENNOC dealers to worry about the service required to keep their trucks and tractors running, and no need for RENNOC owners to worry about the upkeep, for **every** unit that enters into both truck and tractor has been selected only after years of experimenting and trial to get the **best** standard part for the particular place used.

FOR STRENGTH, durability and economy of maintenance the Rennoc Worm Drive Truck and Truck Tractor are absolutely unsurpassed.

THE RECEPTION already given the RENNOC products has surpassed our expectations, and a wide distribution to meet the already fast growing demand is thus made necessary.

DEALERS writing us at once will receive a chance that seldom comes in any business—an opportunity that must be fully understood to be appreciated.

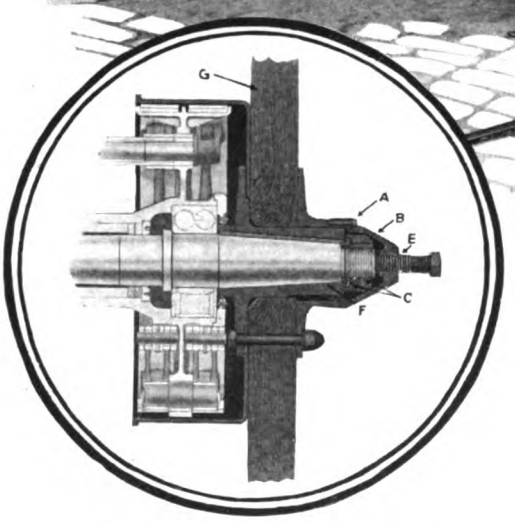
FULL PARTICULARS on request. Write or wire today for immediate consideration. Dept. D4.

RENNOC-LESLIE MOTOR COMPANY

2007-09 W. Alleghany Ave. **Philadelphia, Pa.**

Digitized by Google





Ready demountability of Sheldon wheel hub. Remove parts A, B and C, replace B (hub cap), insert E (set screw), and screw against shaft, Tap back of wheel G till it comes loose.

See That Tapered Drive Shaft

That's another feature that makes possible the quick and easy demountability of the wheels from the Sheldon Worm Gear Semi-floating Rear Axle.

There are just six simple operations (see cut) necessary to remove a wheel from the Sheldon Worm Gear Axle and they are easily understood and performed in a few minutes by any ordinary workman.

Service and utility are the keynote of Sheldon supremacy.

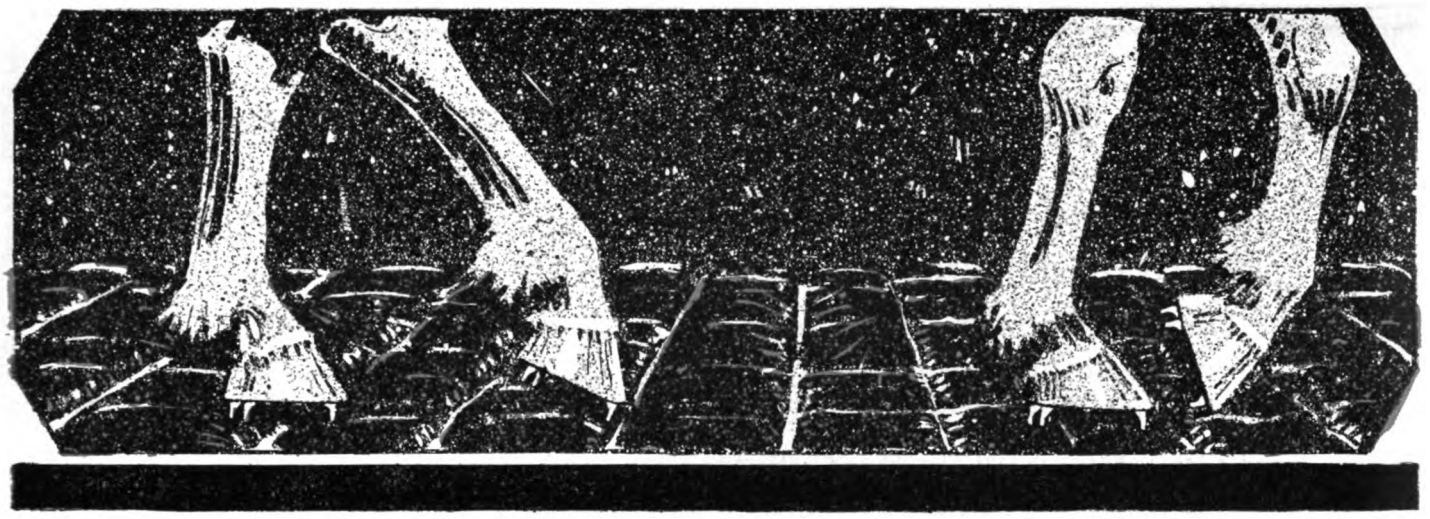
Write for more complete information.

SHELDON

WORM GEAR AXLES

SHELDON AXLE AND SPRING CO. *Makers of springs and axles for heavy duty service for more than fifty years.* WILKES-BARRE, PA.

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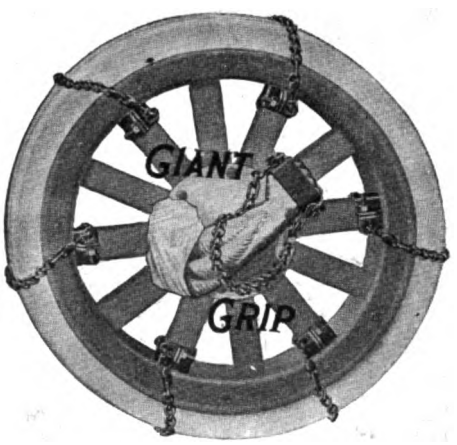


The Famous Toe-Hold of the Sharp Shod Horse

Has Nothing On Your Motor Trucks Equipped With

Giant Grip Non-Skid Chains

The Only Non-Skid Chains That Can Be Attached or Detached Without The Use of Tools



All Hooks Are Attached To The Outside of Clamps For Convenience and Speed In Fastening

All the pull that's in your motor trucks gets its chance to make good, even over the iciest winter roads, when you hook on a set of GIANT GRIP Non-Skid Chains. No slipping or sliding holds up the schedule of trucks sharp-shod with GIANT GRIP. No swaying or skidding results in situations that cause you loss of time or money.

GIANT GRIP Non-Skid Chains on any truck, make driving under worst conditions as safe and sure as it is on a clean, dry pavement. They are built to go on quick, and they can't work loose. The cross chains are attached to GIANT GRIP Clamps from the outside, for convenience and speed in fastening. The Clamps, not removed with the cross chains, are lined with "Gripoid"—our special creosote prepared lining that lasts as long as the steel itself.



The Exclusive Giant Grip

Trucks equipped with GIANT GRIP Non-Skid Chains cut to the road, regardless of ice or snow. In mud they find bottom—their firm grip pulls you through. Save their price over and over again—and they last, properly used, longer than your truck.

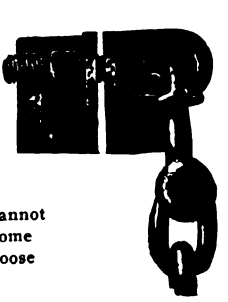
Write for free illustrated literature, with complete details.

Fast sellers that bring dealers business that pays..

WRITE.

CHALLONER COMPANY

Established 1863 **Hancock St., Oshkosh, Wis.**



Cannot Come Loose

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Better Because It Is Simpler

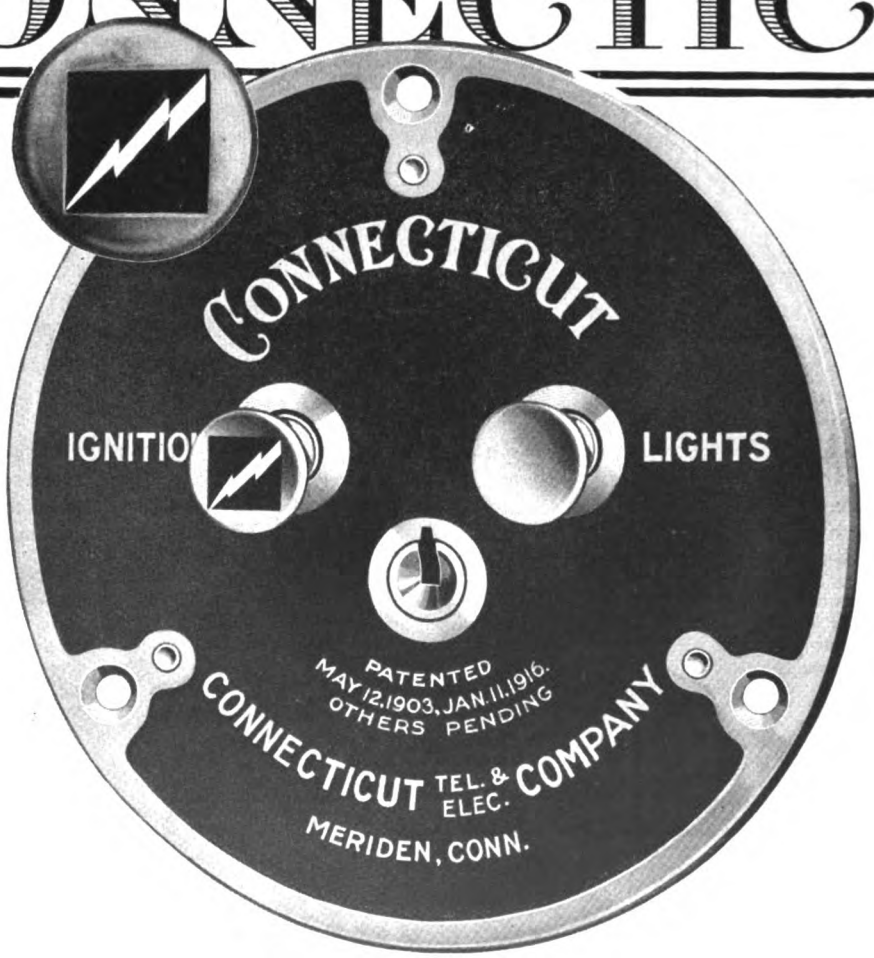
Simplicity is the first essential of a good control switch—simplicity design—simplicity operation.

The new Connecticut Automatic Switch is the simplest and most suitable ignition and lighting control there is. Two buttons—one for ignition, the other for the lights—do it all.

One button with three positions—one for "off," one for "dim" and one for "bright"—is easier to find and easier to operate than any other arrangement.

CONNECTICUT TELEPHONE & ELECTRIC COMPANY
Meriden Connecticut

AUTOMATIC IGNITION
CONNECTICUT

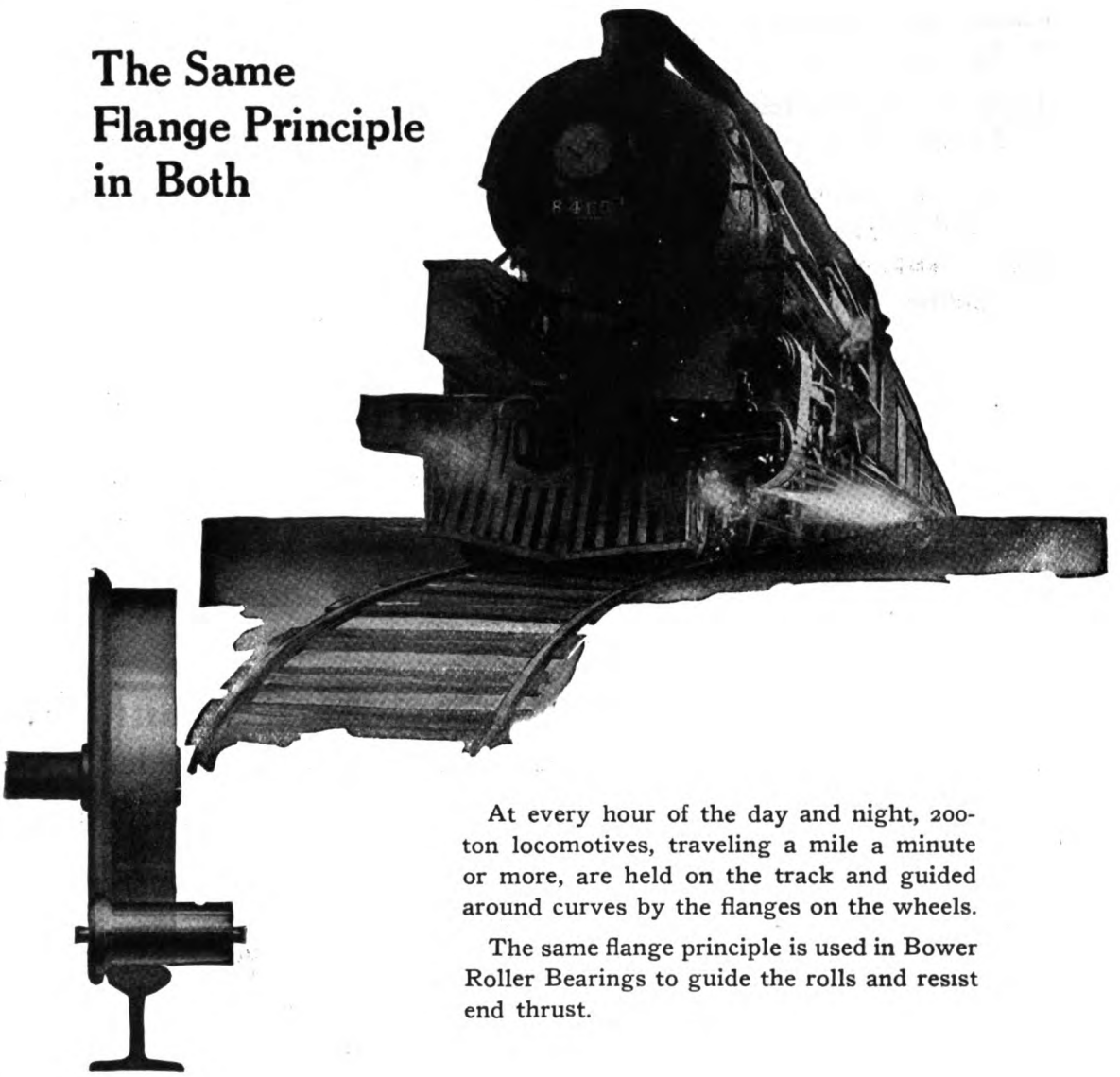


When writing advertisers please mention Motor World—It identifies you

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BOWER SAVES POWER

The Same Flange Principle in Both



At every hour of the day and night, 200-ton locomotives, traveling a mile a minute or more, are held on the track and guided around curves by the flanges on the wheels.

The same flange principle is used in Bower Roller Bearings to guide the rolls and resist end thrust.

BOWER

ROLLER BEARING CO.

Detroit Michigan

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MP Types
Primary and Secondary
Ignition Cables

Braided and Armored
Lighting Cables

Starting Cables
MP S Types
Primary and Secondary
Ignition Cables

Wires are the arteries thru which flows the electric current which gives the vital spark to the automobile engine.

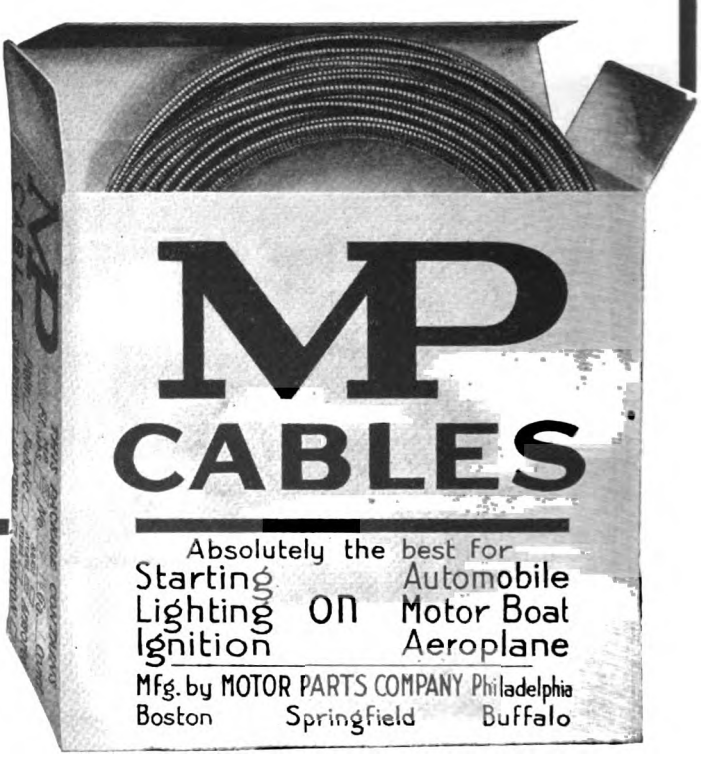
The stronger the electric cables—these arteries of the starting, lighting or ignition system—the less trouble your customer will have with his car. MP Cable in quality, insulation and texture is uniform and dependable—so much so that it is backed up by a real guarantee.

It is packed for convenient handling, but a small piece left over from one package will match precisely, in size and quality, the cable in a new package.

Assure yourself of steady customers by protecting their electrical apparatus with MP Cable.

In stock for immediate deliveries. Ask your jobber. A postcard will bring you samples and prices.

Motor Parts Company
816 North Broad St., Philadelphia
Boston Buffalo Springfield



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HARVEY TRUCKS

An Unusual Opportunity for a Few Strictly High Grade Distributors and Dealers

A national and constantly increasing demand for HARVEY 2½, 3½ and 5-ton Trucks and Tractors necessitates our appointing a few additional distributors and dealers at strategical merchandising centers throughout the United States.

Harvey Worm Drive Trucks

HARVEY Trucks have an enviable reputation of seven years' standing. The Standard Oil Co., Texas Co., Marshall Field & Co., Cudahy Packing Co., City of Chicago, Continental Can Co. are but a few of many prominent HARVEY users.

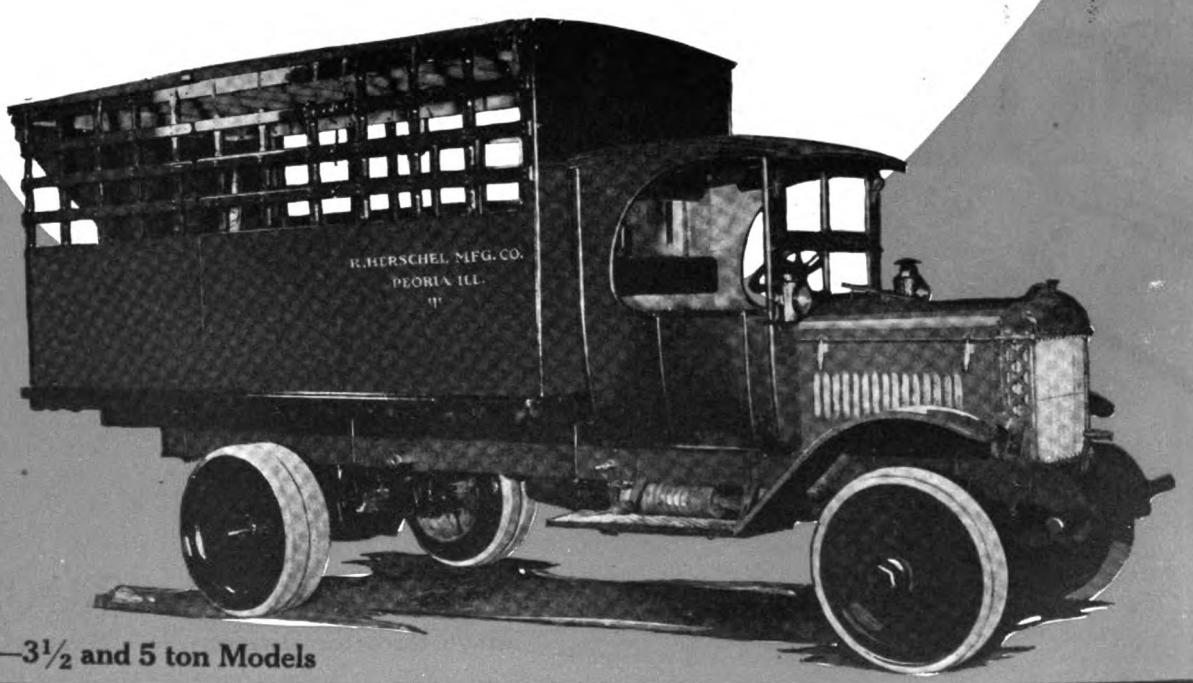
A 62-year-old concern builds HARVEY Trucks and backs them.

Success in the fastest developing branch of the automotive industry is certain to HARVEY dealers who qualify. It will repay you to investigate so attractive an opportunity.

Write or wire us for complete information.

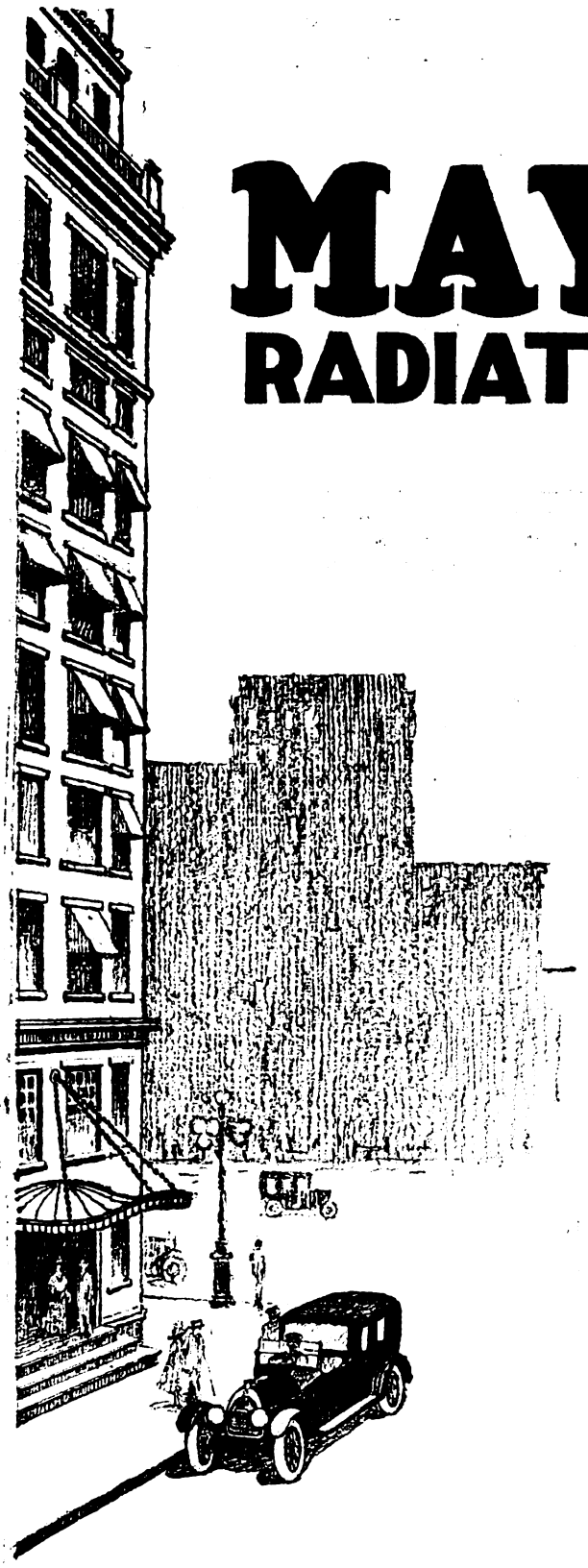
1910-1917
Seven Years
of Success

HARVEY MOTOR TRUCK CO.
HARVEY, ILLINOIS (Chicago Suburb)

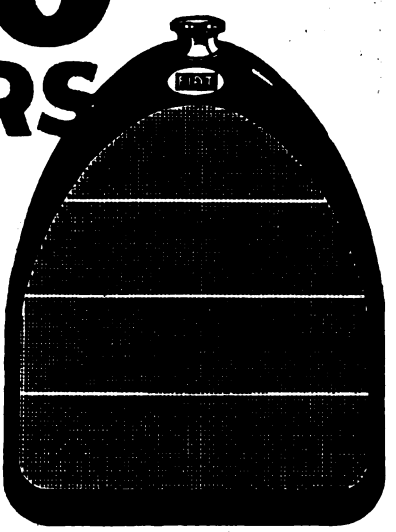


2½—3½ and 5 ton Models

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MAYO RADIATORS



Mayo Radiators show their quality; they also help show the car's quality. When you see a Mayo Radiator on a car or advertised as part of a car, it is a pretty good indication that the rest of the car is in keeping with the highest standards of construction.

Greatly improved and enlarged factory facilities make it possible for us to assure manufacturers prompt delivery on all orders.

MARLIN-ROCKWELL CORPORATION

Mayo Radiator Division, New Haven, Conn.

General Sales Office:

50th Street and Lancaster Avenue - Philadelphia, Pa.

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RACINE
Country Road & Multi-Mile Cord
TIRES



More Money for Dealers Who Sell This Quality Line

A great drive to make more money for the dealers who sell *Racine Country Road* and *Multi-Mile Cord* Tires—a *national* advertising campaign based on the strongest quality tire selling idea ever developed—these are *Racine Rubber Company* plans for 1918.

All is ready to start and now is the time to make your arrangements with a *Racine Rubber Company* distributor for next year.

YOUR SUCCESS IS CERTAIN

Our plans are made with the definite purpose of making dealers who sell *Racine Country Road* and *Multi-Mile Cord* Tires, the most prosperous tire dealers in their business centers.

With no advertising whatever, *Racine Country Road* Tires have built up great demand. Now, with strong national advertising to back up proved quality of both *Racine Country Road* and *Multi-Mile Cord* Tires, even greater success is in store for dealers who sell these tires.

The keynote of *Racine Rubber Company's* advertising is of such importance that it must hit the bull's eye. It must bring numbers of new customers to every dealer who handles this quality line.

COMPLETE QUALITY LINE

Racine Rubber Company brings the dealer a tire for every demand—the famous *Racine Country Road*—5000-mile guarantee—the *Racine Multi-Mile Cord*—a cord tire of extra high quality. Also service-proved red and gray tubes.

EVERY RACINE TIRE A GOOD TIRE

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RACINE RUBBER COMPANY ADVERTISING



All This Means Money to You

More than fifteen million people a week will be reached by *Racine Rubber Company's* advertising in The Saturday Evening Post, Country Gentleman and leading State farm papers.

Practically every automobilist in your trade area will be told again and again, the supreme quality of *Racine Country Road* and *Multi-Mile Cord* Tires. These *Racine Rubber Company* advertisements will be *your* advertisements—telling the car owners in your own trade radius how and why *Racine Country Road* and *Multi-Mile Cord* Tires *do* mean more miles—more service—more satisfaction.

The Thing to Do Is Act! Send the Coupon NOW

Are you content to *watch* the success of dealers who sell *Racine Country Road* and *Multi-Mile Cord* Tires? Dealers who took on the *Racine Country Road* Tire years ago at the start, have stuck to this quality line and are making money. Now—with *national advertising*—greater success than ever is assured.

Co-operation From Distributors

Distributors for *Racine Country Road* and *Multi-Mile Cord* Tires are conveniently located at all principal distributing points. You will find *Racine Rubber Company* distributors top-notch tire men, equipped to make prompt deliveries and give you every co-operation.

You can learn all details of this money-making offer. Use the coupon—and information will be quickly furnished.

Racine Rubber Company
Dept. 6, Racine Wis.

RACINE RUBBER COMPANY
Racine, Wis.

Gentlemen: Please have your nearest distributor furnish details of the *Racine Country Road* and *Racine Multi-Mile Cord Tire* opportunity with the understanding that it will in no way obligate me. Yours very truly,

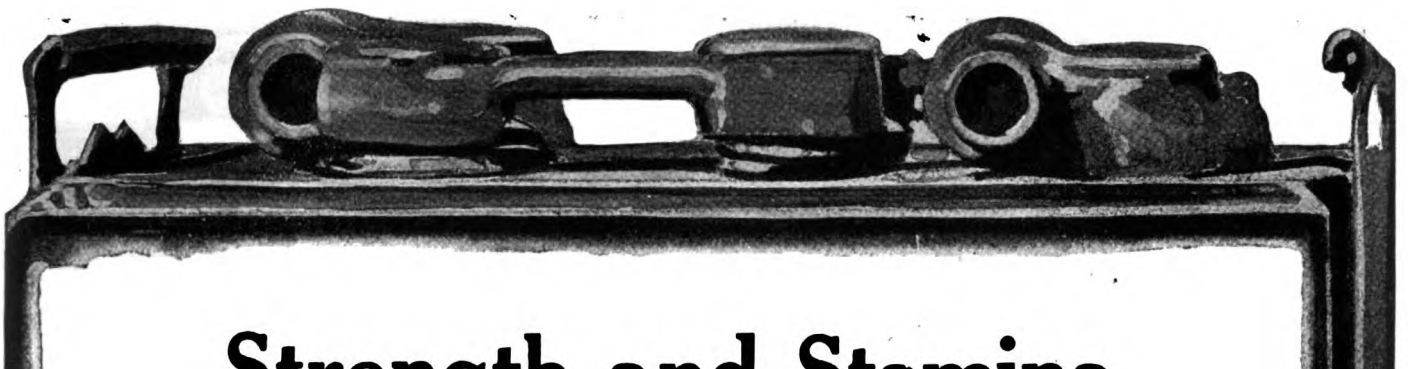
Name.....

Address.....

City.....*State*.....

(6)

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Strength and Stamina

Gould Storage Batteries in service on Commercial Cars have consistently demonstrated strength and stamina—power and staying-power.

Their reputation for service on both electric and gasoline Commercial Cars is not of recent origin but extends back to the earliest days of the truck industry.

A Gould Storage Battery—whether for a submarine boat, a motor truck or a pleasure car—can be depended on. The quality is in-built.

A generation of experience is behind it.

Write for name of nearest Gould distributor

Gould Storage Battery Co.

30 E. 42nd Street, New York

GOULD STORAGE BATTERY

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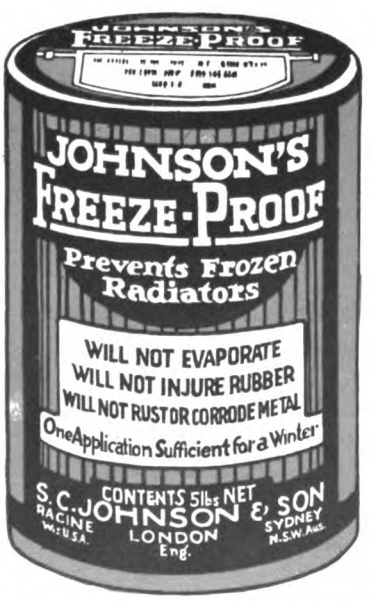
JOHNSON'S FREEZE-PROOF

Prevents Frozen Radiators

THE only way a motorist can be positively sure that his radiator won't freeze up is to use a non-evaporating anti-freeze preparation. You can never be sure of Alcohol or any other product which evaporates with the water. Besides this, the price of Alcohol makes it practically prohibitive for the coming winter.

Does Not Evaporate or Steam

Johnson's Freeze-Proof does not evaporate with the water. One application is sufficient for the whole winter unless the solution is weakened by leakage of the radiator or hose connections—through the overflow pipe—or by boiling over.



Economical and Easy

Johnson's Freeze-Proof is the most economical anti-freeze compound on the market. It is very easy to use—simply dissolve in water and pour into the radiator. One package is sufficient to protect a Ford to 5° below zero; for large cars use two packages to protect to 5° below zero, and three packages to protect to 20° below zero.

S.C. JOHNSON & SON RACINE, WIS

When writing advertisers please mention Motor World—It identifies you

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JOHNSON'S FREEZE-PROOF

Does Not Evaporate or Steam

Absolutely Harmless

Johnson's Freeze - Proof does not injure rubber, cloth, packing or metal of any kind. It does not rust or corrode metal. There is less rust with Johnson's Freeze-Proof than there is with water alone or with a combination of water and alcohol.

Extensively Advertised

Johnson's Freeze - Proof is being very extensively advertised in the motor papers, magazines and weeklies. Its many advantages will make it the standard anti-freeze preparation for the coming winter. Your stock will not be complete without Johnson's Freeze-Proof. It is readily procurable as practically all jobbers have it in stock.

Johnson's Freeze-Proof is put up in packages containing 6½ lbs. net which retail at $1.50 each in the U. S. A. Liberal discounts to dealers. For further information write

S. C. JOHNSON & SON
Dept. MW
RACINE, WIS.



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FAIR LIST PRICES



FAIR TREATMENT

The Tire Trade Magnet



Where You See This Sign Goodrich Tires are Stocked

THE law of business attraction is as strong as the law of the lode stone, and a *Goodrich dealer's sign draws the tire buyer into your store* as a magnet draws steel.

An automobilist in need of tires stops at the *first* Goodrich sign because he knows that *there* he finds a Goodrich square dealer selling the *best* tires made at the fair prices of the Goodrich Fair List.

He buys without hesitation, *sure* of *quality*.

The magnetic PULL of the Goodrich Dealer's Sign is a mingling of:

Goodrich prestige, which means rubber and means automobile tires to the millions of America;

Goodrich reputation, which spells quality of tires and good faith of service and guarantee;

The Goodrich National Touring Bureau, which through its splendid missionary work amongst automobilists of the country—its *route cards*, its *road maps* and its Guide Posts, pointing the right way to the nation—links automobile touring with the sign above a dealer's door.

Last, the tremendous selling force of the 1917 advertising campaign with which Goodrich has aroused the nation to *preparedness* in tires.

Enlist the selling power of our great national weeklies and monthlys, of the metropolitan press and your home newspapers to make your business for 1917 bigger—

By placing the tire Trade Magnet—the Goodrich Dealer's Sign—above your door.

GOODRICH

SILVERTOWN CORD TIRES SAFETY TREAD FABRIC

Goodrich Brown Tubes and Gray Tubes

The B. F. GOODRICH RUBBER CO.
Akron, Ohio

BEST IN THE LONG RUN

Digitized by Google

How is Your Car on the Hills?

IT'S fun to take a good steep hill in some cars. They seem to welcome the chance to show off. Go at it with a vigor and power that simply waft you to the top.

And then others labor and thump and wheeze. Finally crawl over the crest on second or low. And you have worked mentally as hard as the car has physically in the effort to get there.

How is it with your car—in the first class or the second? It will be in the first without fail, other things being equal, if you will give the motor a fair chance and use

TEXACO MOTOR OIL

Texaco Motor Oil will do this for your car—it will enable the motor to deliver all the power there is any possibility of its developing. It will give you the satisfaction of knowing that you have done your part.

Texaco Motor Oil lubricates perfectly. It reduces friction to a minimum. It stands up well in use, retains its original lubricating qualities, because it prevents the leakage of gasoline into the crank case. Due to certain basic qualities it cannot deposit a hard carbon crust. It is the oil for *results*.

When you buy motor oil buy Texaco. The best way, the safest way, to buy is in one or five gallon cans. You can identify Texaco by its clear, clean color.

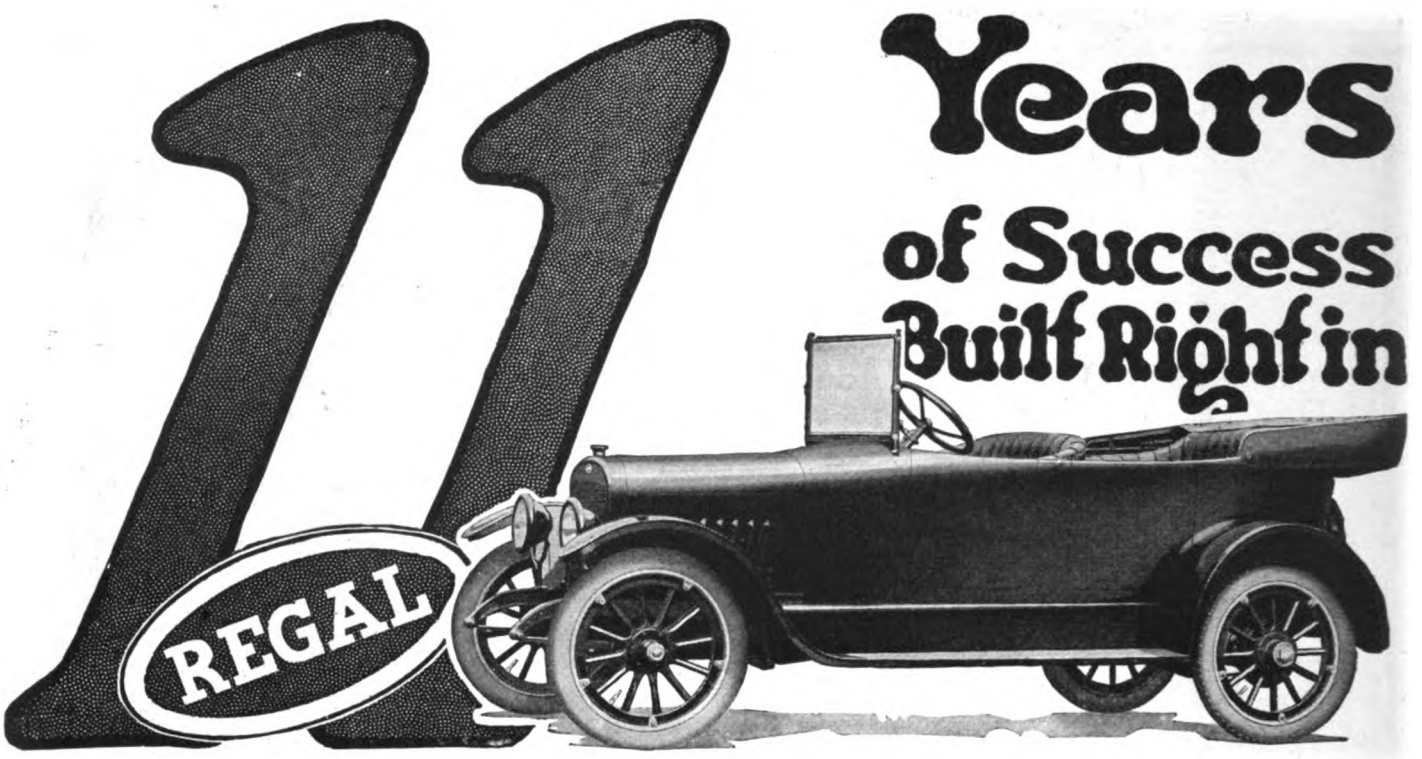
THE TEXAS COMPANY

New York Chicago Houston

DISTRIBUTING OFFICES IN MOST CITIES



Digitized by Google



$795 The Hi-Power Four

F. O. B. DETROIT

is the culmination of years of consistent adherence to an unchanged production policy:—

"The Best Car That Can Be Built For the Price"

The Regal organization has always made good cars. This is the best it has ever marketed.

The sterling qualities of the ***Hi-Power Four*** have been thoroughly proved out by more than two years' use in the hands of thousands of owners. During this period the refined and improved details of the present model were developed.

Today the ***Hi-Power Four*** typifies the last word in medium priced car construction as to

Beauty Comfort Quality
Power Reliability Economy

Gains by comparison—a ready seller—at $795.00

New Catalog Ready for Distribution

Regal Motor Car Company, DETROIT, MICHIGAN

An Unusual Selling Agreement For a Few Live Dealers

Digitized by Google

RADIATOR NEVERLEAK

A Million Motorists Will Need and Want this Wonderful Preparation

Contains no meal—no cement, acid or sediment. Nothing to clog or injure the cooling system. Prevents rusting and the formation of scale. Mixes with water—does not interfere with anti-freezing compounds—and *always stops the leaks.*

Mr. DEALER—71% Profit

Write for further particulars and details of this wonderful selling specialty. Sells on sight—backed by big advertising campaign and the well known Liquid Veneer people. Two sizes, 50c and 75c. Write today.

BUFFALO SPECIALTY CO.

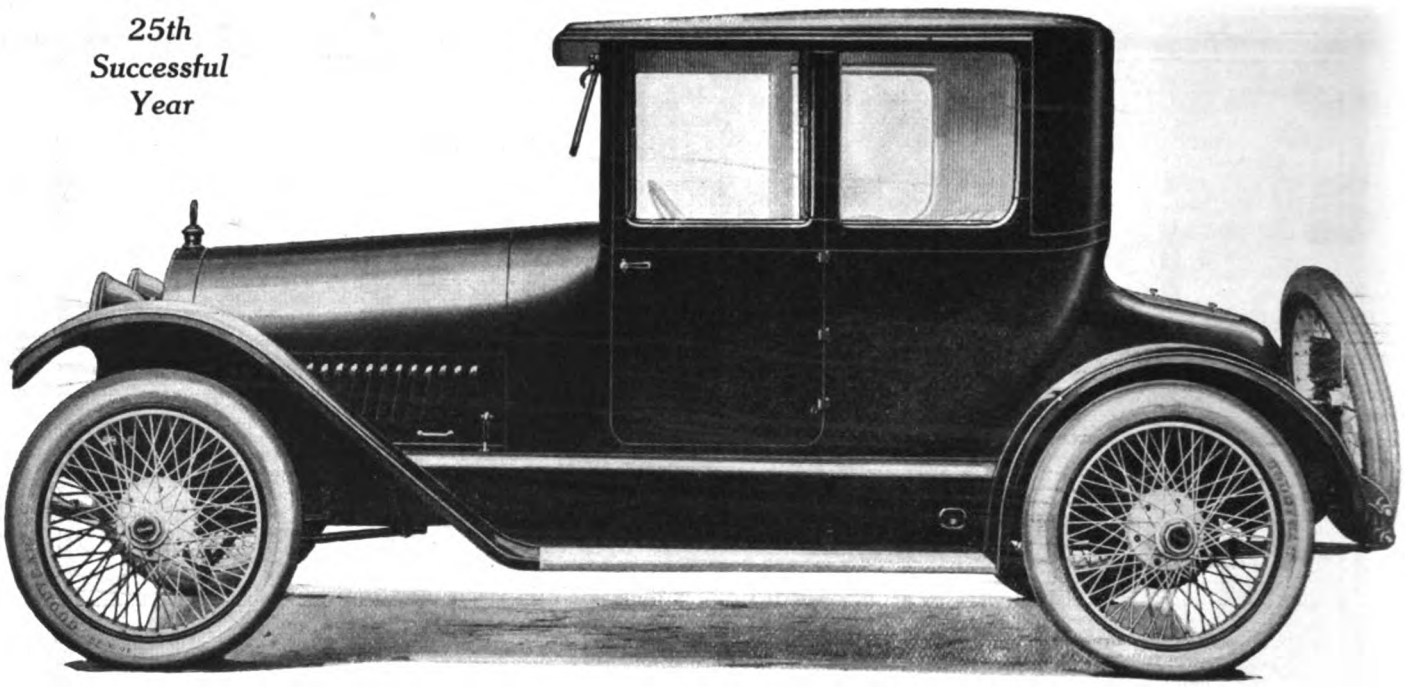
BUFFALO, N. Y.
U. S. A.

BRIDGEBURG, ONT.
CANADA



Digitized by Google

25th Successful Year



The New Haynes Coupe

REPLETE with the latest ideas in appointments, arrangements, upholstery and the like, this new Haynes Coupe is destined to rank foremost among the season's offerings.

The 127-inch wheelbase provides a roomy interior which seats four. The rear seat accommodates two. The driver's seat is slightly forward. The fourth seat lets down from the dash at the right front.

Easy-riding qualities and a permanently quiet body are assured by the long, broad springs fore and aft and the sturdy frame structure.

The upholstery is of attractive and serviceable wool cloths. Body lights and a Perfection Heater are two of the many conveniences.

Four rich colors in body finishes are offered.

—The new Haynes Line of enclosed cars also includes Springfield-type Sedans and Town Cars for both the "Light Six" and "Light Twelve" models.

Write for the interesting, profit-assuring proposition which the Haynes has to offer you as a dealer.

THE HAYNES AUTOMOBILE COMPANY

70 S. Main St., Kokomo, Indiana, U. S. A.

HAYNES

"America's First Car"

Digitized by Google

Same Smoothness after 12 months' service on Ford

Almost doubled hauling capacity of Ford and trailer



Note thickness—showing little evidence of wearing down in 12 mo. service

This Cork Insert equipped band was photographed after 12 months of the most severe service equal to 3 years wear on the average Ford car—read the letter of the Warner Mfg. Co.

WARNER MFG. COMPANY, Beloit, Wis.

Dear Sirs:

We have been operating our shop Ford equipped with your Cork Insert Transmission Linings for the past year. We have been using this Ford attached to one of our 2500-pound two-wheel trailers of which I am herewith enclosing a photograph.

Before equipping the Ford with your Cork Insert Transmission Linings we were using the usual linings that are furnished with the car and we were unable to haul more than 1500-pound loads successfully with the old style linings as we would frequently kill the engine in attempting to start the load in low gear. Also there was a decided chatter and rocking noise in working the foot brake which led us to use Cork Insert Transmission Linings.

We have been operating this outfit very successfully hauling loads as high as 2500 lbs. and have experienced no difficulty in starting or stopping as they produce a smooth friction action without jar or chatter.

In other words, the use of Cork Inserts has enabled us to do all of our work with this Ford car and trailer which has practically eliminated the use of the one-ton truck as it is doing all the work that we were previously doing with this one-ton truck.

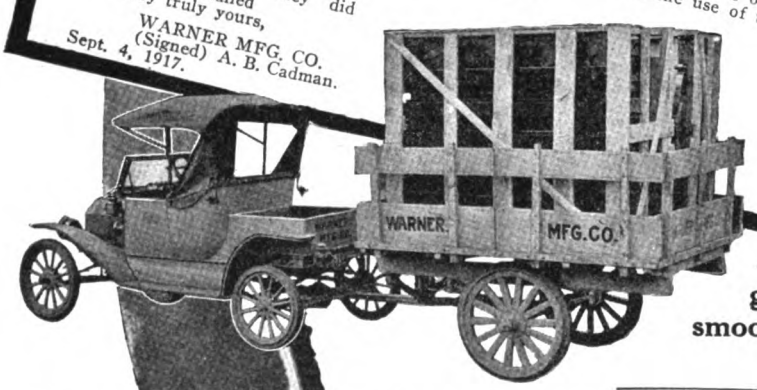
These linings are apparently working with the same degree of smoothness as they did when first installed

Very truly yours,

WARNER MFG. CO.
(Signed) A. B. Cadman.
Sept. 4, 1917.

ADVANCE
CORK INSERT
TRADE MARK REG. COPYRIGHTED 1917
TRANSMISSION LININGS FOR FORDS

$3 for set of three



Note good condition of corks. They are soft and as full of grip as ever after 12 months service and, as letter says, give same degree of smoothness as when first installed

Keeps the fan fanning—Keeps the motor cool

ADVANCE
CORK INSERT
FAN BELT FOR FORDS
$1 for 1917 Ford
85c for Earlier Models

ADVANCE AUTOMOBILE ACCESSORIES CORP.
Dept. J 13-1
56 E. Randolph St.
Chicago

DEALER COUPON

Advance Automobile Accessories Corp. Dept. J 13-1
56 East Randolph St.
Chicago

Send by express, subject to regular dealer discounts, the following:

- ☐ 1 dozen sets Cork Insert Transmission Linings.
- ☐ 1 dozen Cork Insert Fan Belts, 1917 size.
- ☐ 1 dozen Cork Insert Fan Belts, 1916 size.

Name.....
City.....State.....
Jobber's Name.....

FORD OWNER COUPON

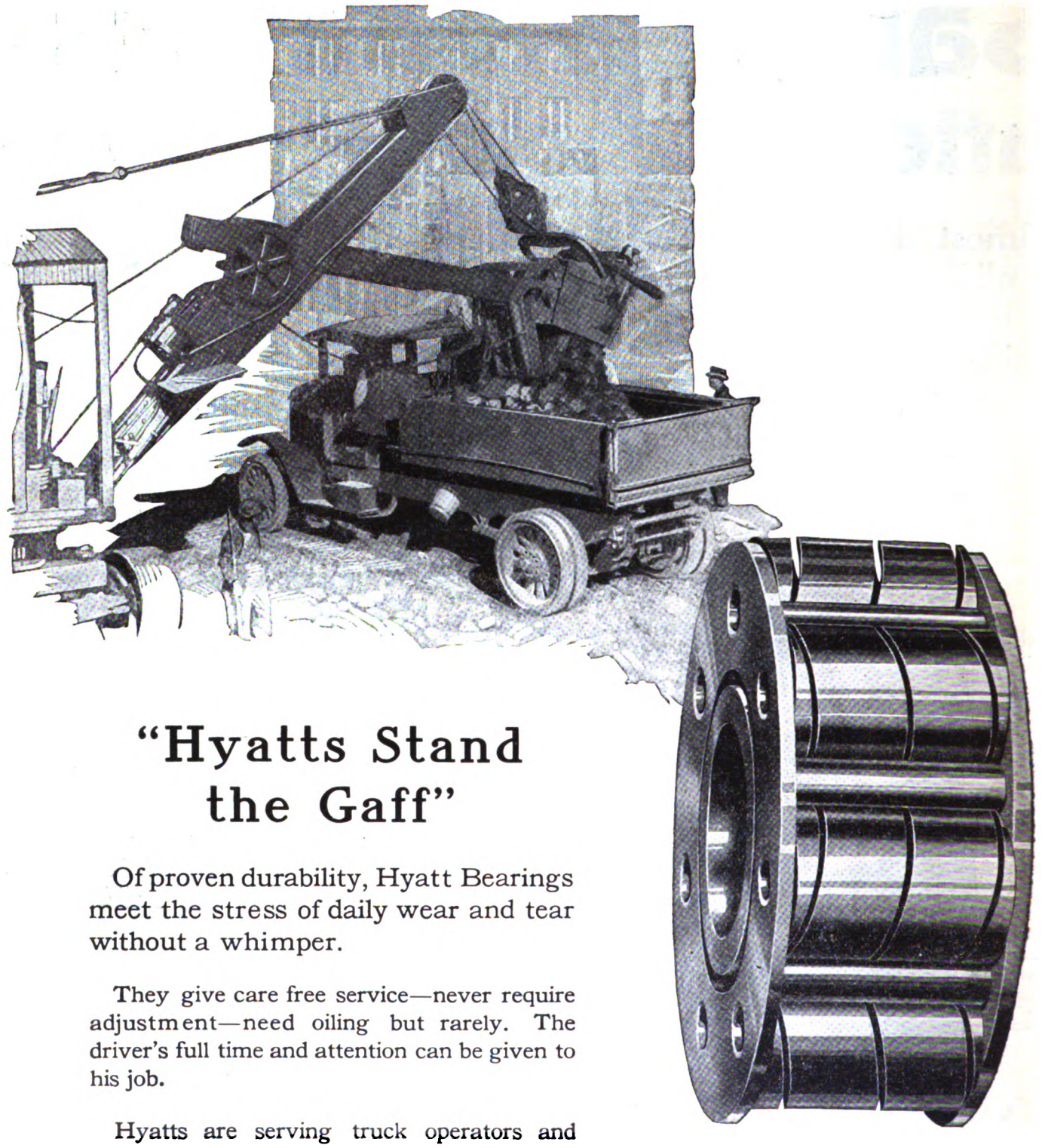
Advance Automobile Accessories Corp. Dept. J 13-1
56 East Randolph St.
Chicago

Enclosed find $.....
Send me:

- ☐ 1 set Cork Insert Transmission Linings.....$3.00
- ☐ 1 Ford Fan Belt for 1917 Ford.....$1.00
- ☐ 1 Ford Fan Belt for 1916 or earlier Ford models.....85c

Name.....
City.....State.....
Dealer's Name.....

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"Hyatts Stand the Gaff"

Of proven durability, Hyatt Bearings meet the stress of daily wear and tear without a whimper.

They give care free service—never require adjustment—need oiling but rarely. The driver's full time and attention can be given to his job.

Hyatts are serving truck operators and automobile owners alike. Both know it is well worth while seeing to it that they have vehicles equipped with

HYATT
ROLLER BEARINGS

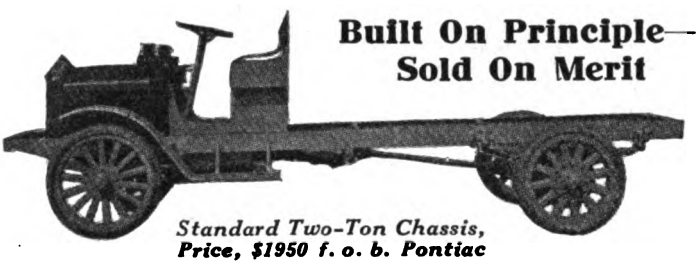
Hyatt Roller Bearing Co.,
Detroit, Mich.

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COLUMBIA

TRUCKS TRAILERS

Worthy of the Name:



Built On Principle—
Sold On Merit

Standard Two-Ton Chassis,
Price, $1950 f. o. b. Pontiac

Straight Talk From—*Leigh Lynch*

We've put a lot of hard work into Columbia 2-ton trucks—several years of it. There's a fair sized fortune represented in our experimenting. The Columbia is no hurry-up-thrown-together vehicle. We learned to do things right way back in the days when Roosevelt was President. We made carriages then and when we started in to make trucks nothing but a good truck—the best truck—would do. So we made one model and stuck to it.

It's the Columbia Two-Ton Truck. We put quality in the Columbia and our dealers and owners put confidence in us. There are no frills in Columbia construction—just old reliable solid worth—tried and true. Standard parts.

Our trailers are built the same way. Columbia Trailers carry 6 tons, built with standard stake bodies, of the very best material. We sell the truck without the trailer, either with stripped chassis or fully equipped. Also we sell the trailer without the truck—or if you like we'll sell you both.

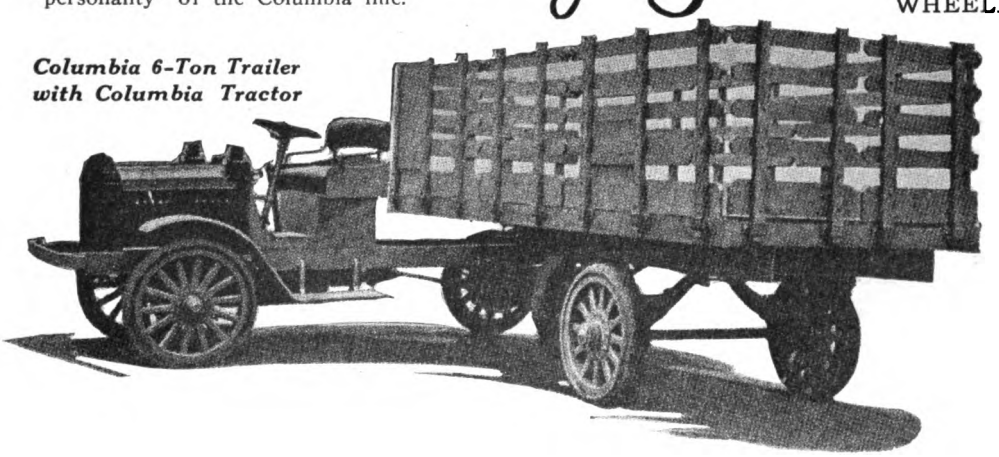
Every Columbia Truck is a dividend payer for its owner and our dealers are happy and prosperous. The Columbia is backed by our guarantee and the resources of our Company. We're here to stay—our growth has been steady—healthy—honest. We know our truck, we want others to know it as we do. Our guarantee is for one year—that's fair, isn't it? These qualities are reflected in the "personality" of the Columbia line.

Leigh Lynch

SPECIFICATIONS

MOTOR—Continental Red Seal, 40 H.P., L-Head Type.
REAR AXLE—Russell, internal gear.
TRANSMISSION—Covert, selective sliding, three speeds forward and reverse.
BEARINGS—Timken roller.
RADIATOR—Tubular (Long Manufacturing Co.).
FRONT AXLE—Schuler.
WHEELS—Hayes artillery type with hickory spokes.
SPRINGS—Perfection.
UNIVERSAL JOINTS—Spicer. Designed for Columbia Trucks.
MAGNETO—Eisemann high tension.
GOVERNOR—Pierce. Set to 15 miles per hour. Sealed.
STEERING GEAR—Worm and worm wheel type, ball thrust bearings, 18″ wheel.
TIRES—36″ x 4″ front, 36″ x 6″ rear.
WHEELBASE—114″, 134″, 144″, 164″.

Columbia 6-Ton Trailer with Columbia Tractor



Dealers: You'll want to handle "the Columbia" line when you get our sales plan. The coupon is for your convenience.

COLUMBIA MOTOR TRUCK & TRAILER COMPANY
PONTIAC, MICHIGAN

Gentlemen:—kindly forward full information relative to your sales plan. I am interested in securing sales rights in

.....

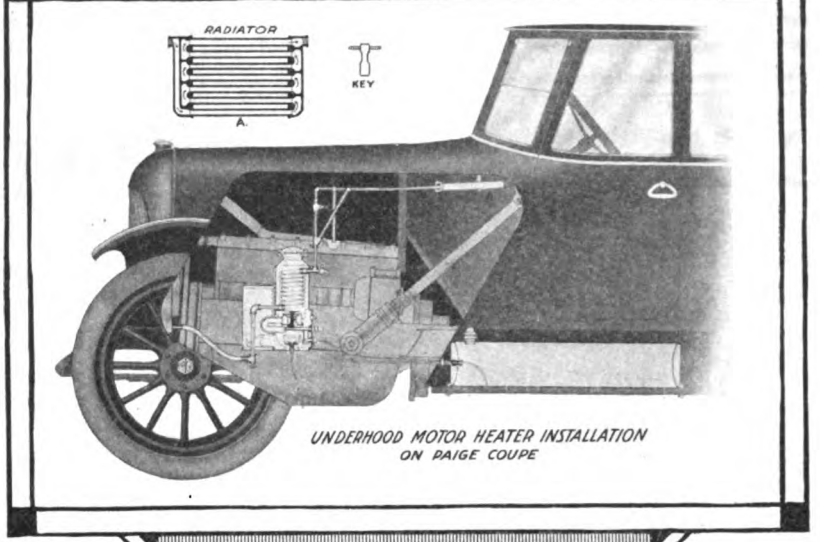
Very truly yours,

Name .....

Address .....

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A Hot Water Heater That Never Fails



UNDERHOOD MOTOR HEATER INSTALLATION ON PAIGE COUPE

Makes Winter Starting Easy, Quick and Sure

The New UNDERHOOD Motor Heater

Heats Both Motor and Car

Combines the two best winter sellers, a motor heater and an enclosed car body heater. Can be installed on any or all cars. The UNDERHOOD MOTOR HEATER draws the water from the lowest part of the radiator, heats it to a very high temperature, then injects this water into the motor at the motor cylinder water manifold. If desired the water can be sent through the car body interior radiator for heating the car body interior.

Now Going into Quantity Production—Dealers Write

Place an UNDERHOOD MOTOR HEATER on your Car and change your cold stiff motor to a live warm one. In operation it eliminates the use of anti-freeze preparations. Motor always warm and expanded with a saving of 25% in fuel consumption. The UNDERHOOD works while the Car is parked or in operation. Endorsed by leading Automobile Insurance Companies. Prolongs the life of the motor. Banishes the heated garage question.

Heater No. 1 $40.00 Installed
Heater No. 2 $50.00 Installed

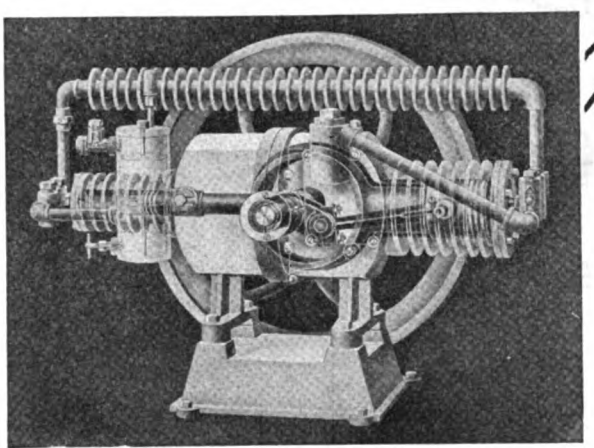
Liberal offer to Dealers. Write today regarding Territory.

UNDERHOOD MOTOR HEATER CORPORATION

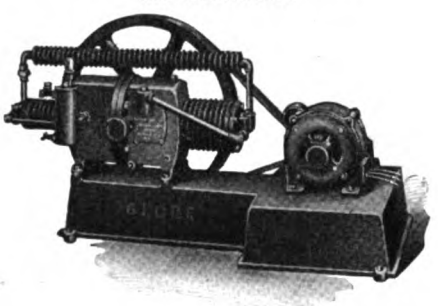
705 BOOK BUILDING **DETROIT, U. S. A.**

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Be Sure You Have GLOBE On Your FREE AIR Sign



Type B Two Stage Air Compressor, Phantom View, Showing Detail of Design and Construction



Type B Two Stage Air Compressor, Motor Driven

A GLOBE Air Compressor Brands Your Service Best

—because it is absolutely dependable, and your trade soon knows it. Through its superiority—due to its two-stage compression—it sells your entire organization on an efficiency basis to motor car owners who use it.

GLOBE Two-Stage Compressors include every modern improvement of worth, besides exclusive patent features. As compared with ordinary single-stage compressors of the same capacity, GLOBE Two-Stage Compressors insure greater saving in power, greater durability and higher efficiency.

Furnished as portable or stationary equipment—with or without storage tanks and motor—to suit your needs.

GLOBE Compressors are made for all purposes, but especially for use in Air Stations for filling automobile tires. They keep the pressure right.

The New GLOBE Unloader Saves You Additional Money, Time and Inconvenience

Permits the compressor to start without any load. Prevents throwing or burning of belts when starting. With motor drive outfits eliminates the danger of burning motor, as the motor comes up to speed without load. By operation of the unloader, the oil trap is automatically drained every time the compressor stops—a feature in itself worth more than the cost of the unloader. Can be attached to Type B GLOBE Compressors already in use. No extra charge with motor drive equipments when furnished complete with motor.

Write for free illustrated literature and paying information you will want to know.

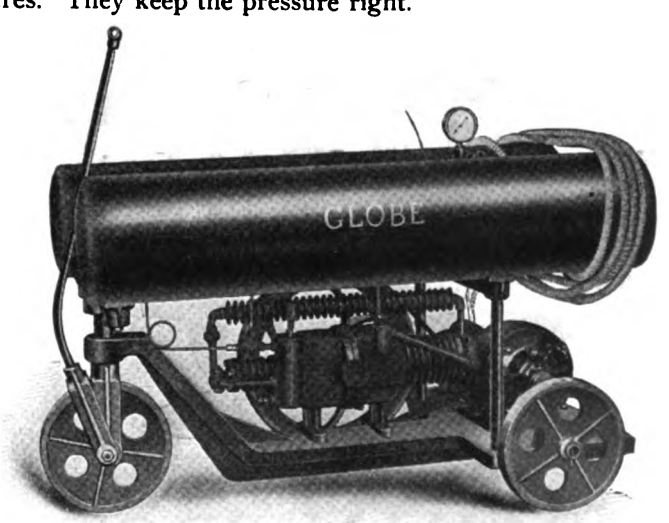


Type B Two Stage Automatic Air Plant Complete with Tank

GLOBE MFG. CO.

Dept. B

Battle Creek, Michigan



GLOBE Portable Automatic Air Plant

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First Announcement

Graham Brothers All-3 UNIT-CAB-BODY

Universal Two Ton Truck Attachment

A thoroughly tested, easily attached, wholly practical Torbensen Internal Gear Drive Truck Attachment.

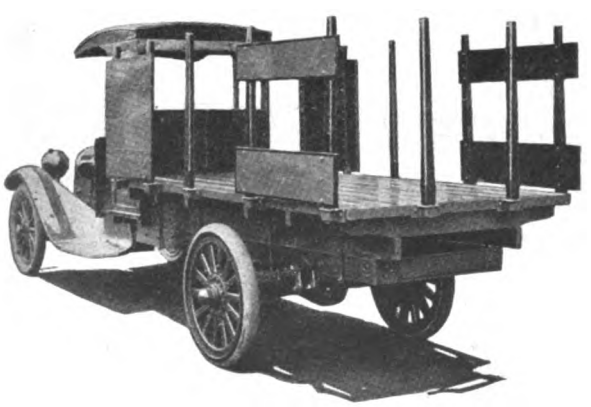
Solves the used car problem. With new cars makes low priced 2-ton trucks. Already attached to and successfully running on Dodges, Cadillacs, Kissels, Kings, Velies, Reos, Coles, Premiers, Buicks, Hudsons, Speedwells, Whites and other makes of cars.

Price—Unit only $490

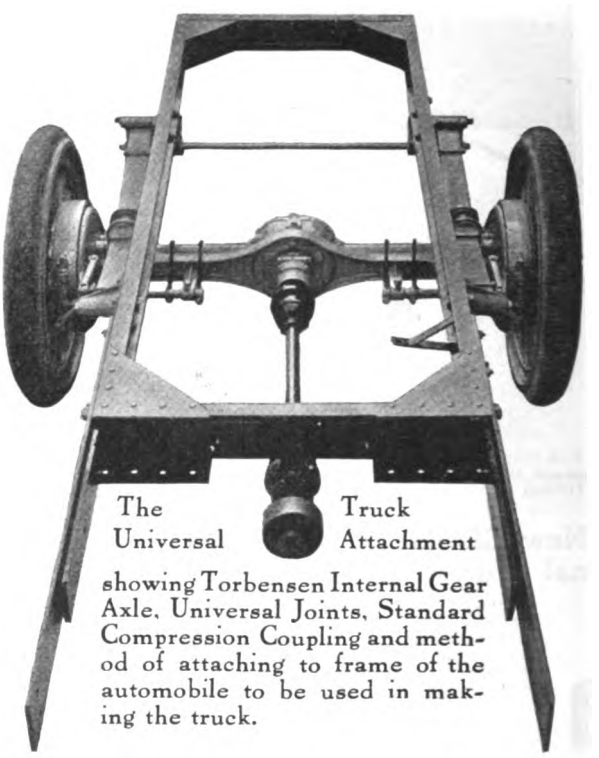
With choice of Stake or Express Body - - - $555

Descriptive literature and circular describing other body styles mailed upon request.

IMMEDIATE DELIVERIES



All-3 Universal Truck Attachment attached



The Universal Truck Attachment showing Torbensen Internal Gear Axle, Universal Joints, Standard Compression Coupling and method of attaching to frame of the automobile to be used in making the truck.

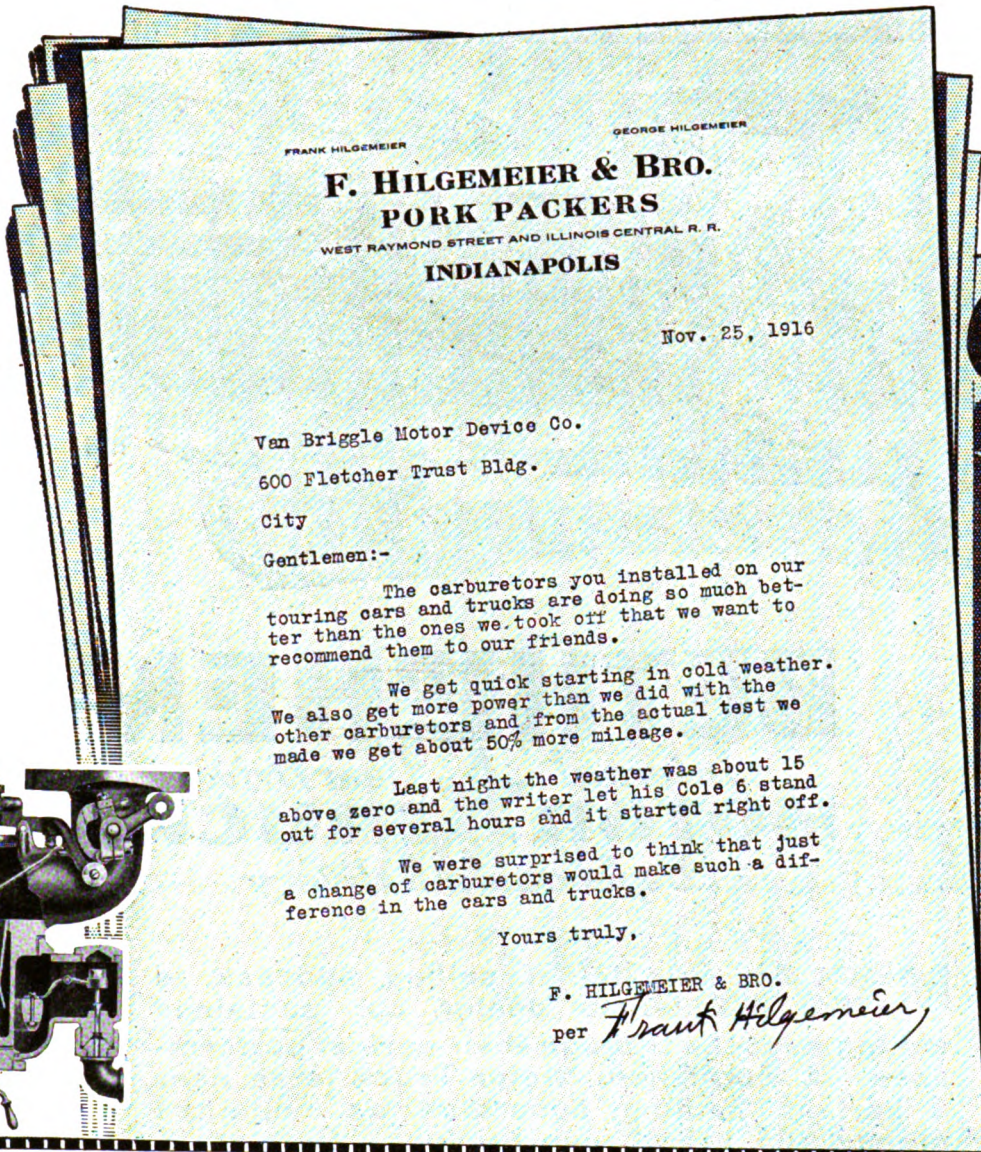
Rear Axle—The famous Torbensen Internal Gear Drive. Propeller shaft carrying two Kinzler-Bennett universal joints. Intermediate Shaft—1¼ inch Chrome special heat-treated steel. This intermediate shaft runs in a Hyatt Roller Bearing 2⅛ inches long. Frame—5 in. 6½ lb. Illinois steel channel. Wheels—14 spoke, extra heavy artillery type. Springs—Hess. The best grade steel of special design, 46 x 2¾; 10 leaves 5-16. Brakes External and Internal. Wheelbase—140 inches.

GRAHAM BROTHERS

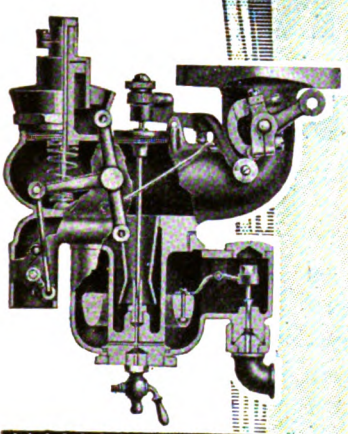
Factories and Executive Offices
EVANSVILLE, INDIANA
Dept. B

Largest Manufacturers of Complete Truck Attachments

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it does!



for Pleasure Cars, Trucks, Tractors

VAN BRIGGLE CARBURETOR

One Principle for all Motors

If you have not already done so, please read the above letter of Mr. Frank Hilgemeier, of F. Hilgemeier & Bro., Indianapolis. He *knows!* On pleasure cars, trucks and tractors—there are also *others* who *know*. Illustrated descriptive booklet free on request. *Send for it.* ¶ JOBBERS AND DEALERS: The Van Briggle is as easily handled as tires. Small stock meets any need. New opportunity for profit and service. Write for proposition.

KEY TO DIAGRAMS: PRIMARY AIR (P.A.); AUXILIARY AIR (A.A.); GASOLINE (G); MANIFOLD (M.); MIXING CHAMBER (D.); VENTURI TUBE (V.); LOCATION OF MANIFOLD ON HORIZONTAL TYPE (Z.).

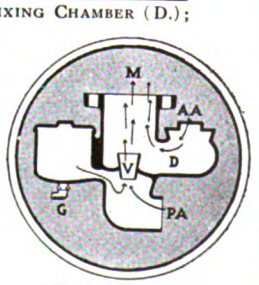


The Van Briggle Way

EXPLANATION OF DIAGRAMS

Because of the peculiar construction of the Van Briggle's primary air chambers, the primary air enters the venturi tube in a whirling, swirling movement, breaking even the poorest gasoline into the most minute particles. The primary mixture then enters the mixing chamber. The auxiliary air, traveling across to the manifold MUST PASS THROUGH THE PRIMARY MIXTURE. Two mixtures are thus assured in the Van Briggle Carburetor—each thorough and absolute. A thorough mixture and complete vaporization mean EVERYTHING to your motor. Compare the Van Briggle Way with The Other Way. There *is* a difference!

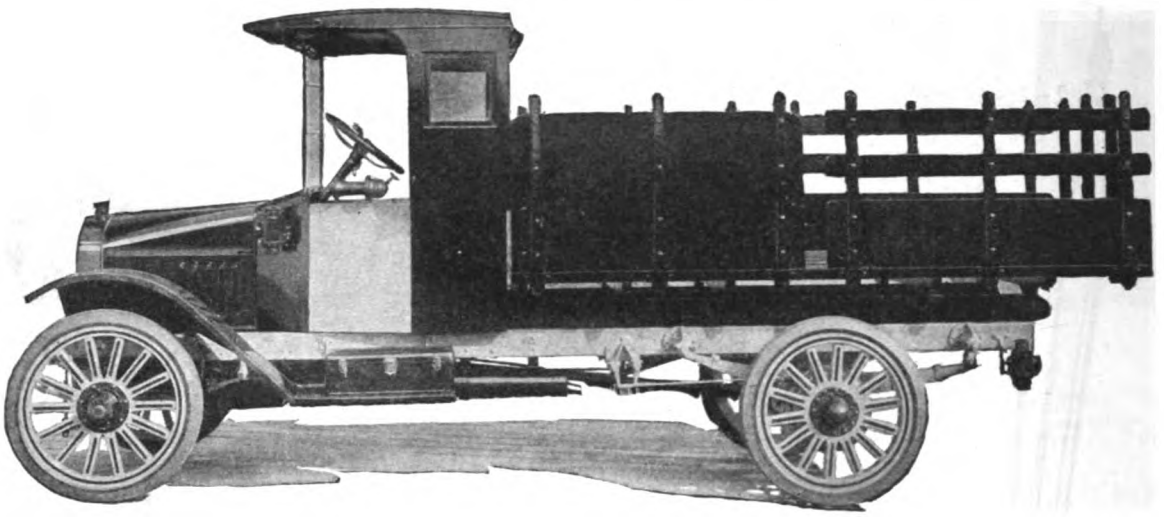
VAN BRIGGLE MOTOR DEVICE CO.
429 North Capitol Avenue, Indianapolis



The Other Way

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BETHLEHEM MOTOR TRUCKS



BETHLEHEM

Internal Gear Drive

MOTOR TRUCKS

Dependable Delivery

MEAN not only initial selling success to the Bethlehem dealer but sustained selling success through their perfect performance. A Bethlehem Motor Truck is as near a perfect hauling apparatus as unlimited money and brains can produce. Bethlehem Motor Trucks are an established selling and hauling success now. They are accomplishing what they started out to do—to dominate the field in their class.

The best reference we can give for Bethlehem selling and hauling power is the nearest Bethlehem dealers.

We will refer you to anyone on our list. Write or wire today; your territory may be open.

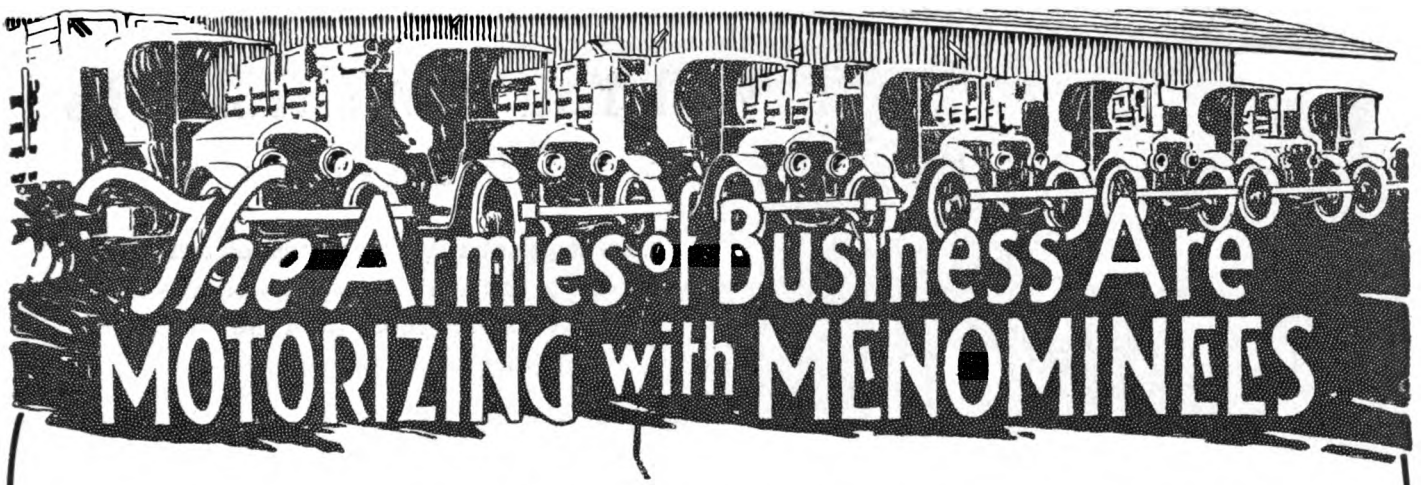
$1245.00	$1775.00	$1305.00	$1850.00
1¼ ton Chassis	2¼ ton Chassis	1¼ ton complete with body and cab	2¼ ton complete with body and cab

TRACTORS - - TRAILERS - - DUMP TRUCKS

Bethlehem Motors Corporation

Allentown, Pa.

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The Armies of Business Are MOTORIZING with MENOMINEES

Doing business the old way—the horse way—costs too much. It isn't 20th century—it isn't efficient—it isn't rapid—it isn't *certain* enough.

The increased cost of doing business *any* way in these days necessitates taking every possible short cut. TIME means more than ever MONEY.

Business men who are going to weather the economic storm of wartime—who are going to capitalize to the fullest extent every advantage conditions present are MOTORIZING with

MENOMINEE TRUCKS

6 MODELS
¾-ton, 1-ton
1½-tons
2-tons
3½-tons
5-tons
All Worm Drive

PRICES
Chassis Only

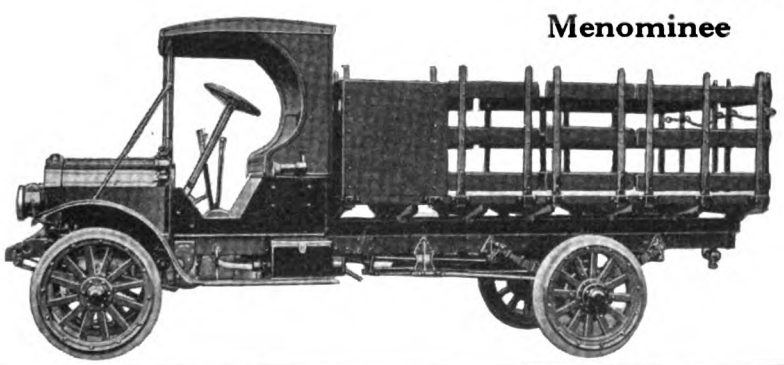
EW $1425
FW $1790
H $2050
D $2475
G $3275
MJ $4150

The merchant—the manufacturer—the business house is few and far between that cannot use at least one of the six Menominee models. It is nothing at all unusual in these times for a MENOMINEE Truck or a fleet of them to shortly *pay for themselves* and pay dividends on the investment thereafter.

Remember MENOMINEE Trucks are built to endure—the first truck built being still in service. Send for MENOMINEE catalog.

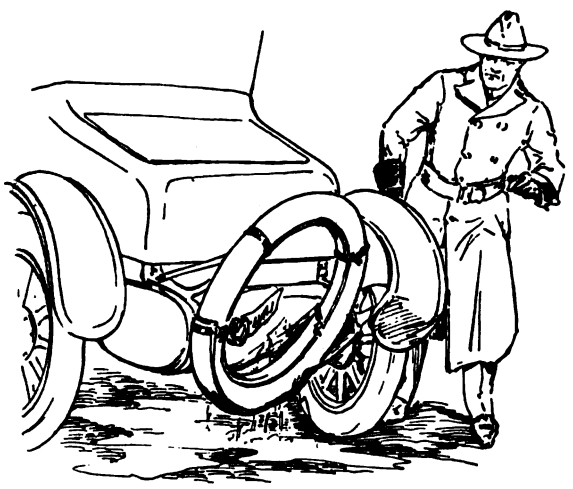
MENOMINEE Dealers are in position to close with 80% of the truck prospects in their locality. Six different models—one for practically every business requirement—insures that. If interested in associating yourself with the finest aggregation of truck dealers in the country use the coupon.

MENOMINEE MOTOR TRUCK CO.
Established 1909
Menominee Michigan



Menominee Motor Truck Company,
Menominee, Mich.
I am interested in becoming a MENOMINEE dealer.
Kindly send your proposition.
Name .....
Address .....

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Will You Profit from His Disaster?

This man depended upon the protection of a rear-hung tire with disastrous results that cost far more than the price of a bumper

Will you profit by his loss and protect your car with a

HALLADAY REAR BUMPER

or will you wait until you have paid the penalty yourself? Experienced motorists have long since realized that they need protection from the rear more than from the front.

A skillful driver can often avoid the danger in front of him, but knows nothing of that which threatens the rear until the damage is done.

The Halladay Rear Bumper is the best possible insurance at lowest cost.

L. P. HALLADAY COMPANY, Streator, Illinois

Distributors: Asch & Co., 16-24 W. 61st St., New York City; E. L. Thompson Co., 817 Boylston St., Boston, Mass.; Gray-Heath Co., 1440 Michigan Ave., Chicago, Illinois; Sanford Brothers, Chattanooga, Tenn., Southern Distributors; Hughson & Merton, Inc., San Francisco, Los Angeles, Portland and Seattle, Pacific Coast Distributors.

AIR
Automatically Controlled

A Remarkable Pump and Tank Outfit

VERTICAL—hence it takes less room—simpler piping than horizontal style—less liability to leak.
THE COMPRESSOR IS CONTROLLED by an automatic switch that starts pump when tank pressure falls to 120 lbs. and stops it when tank pressure reaches 150 lbs.
THE COMPRESSOR used on this unit is the No. 2 Lectroflater—which has the B & D patented air-cooled system——that cools first the motor, then the air compressor cylinder.
THIS IS AN OILLESS unit that requires packing with grease only four times a year.
FIVE AVERAGE-SIZED TIRES can be inflated from dead flat to full pressure without waiting for the Lectroflater to catch up. Ten average-sized tires can be increased from 40 lbs. to 80 lbs. pressure without waiting for the Lectroflater to catch up.
THE OUTFIT comes completely piped and wired. As soon as removed from crate is ready for work by plugging in the nearest lamp socket. Can be placed in any out-of-the-way corner and piped to hose if desired.

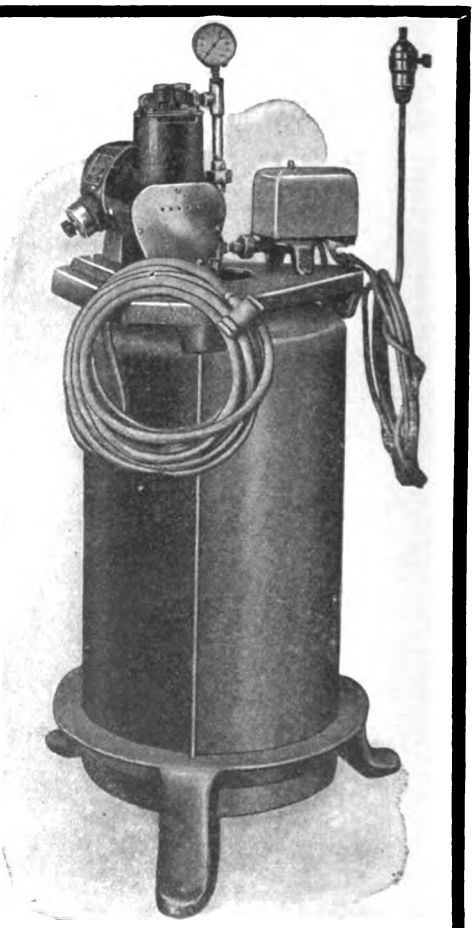
MAIN POINTS: Size of Tank, 16" x 30"; Capacity of Compressor, 2½ cu. ft. per minute; Current Consumption, 320 Watts; Length of Hose with Automatic Tire Valve, 25 ft.; Largest Diameter of Outfit, 24 in.; Total Height, 49 in.; Weight, 190 lbs.

LECTROFLATER ELECTRIC AIR PUMPS

Write today for new illustrated booklet "The Friendly Touch," describing our complete line of electric air pumps. We make many types and sizes, at prices to fit most any pocketbook. Interesting proposition for jobbers.

BLACK & DECKER MFG. CO.
109 South St. Baltimore, Md., U. S. A.

Distributors in Canada — Northern Electric Company LIMITED — Montreal



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HOW TO SELL MORE CARS

It's a problem, surely, to sell automobiles to your prospects with the winter winds howling outside. But it's a problem that vanishes when you can show them the Thermo Auto Heater installed in the bottom which keeps their feet and limbs perfectly warm no matter what the weather.

Tucked under robes and with warm feet one is warm all over and an open car can be driven all winter.



THERMO AUTO HEATER

is very beautifully finished and makes an attractive display. Made with nothing to break and no holes to clog. It sets on the floor (with ¼ inch clearance) not in it, and can be removed in summer.

The temperature is kept even and at the point desired by means of an adjustable thermostat which automatically regulates the heat supply with no need of attention.

The Thermo Auto Heater utilizes the waste heat from the exhaust. It cannot overheat, leak gas or get out of order. It occupies little space, will fit any car and can be installed in a half-hour. In two sizes—oblong—28″x4″x⅞″ and square—8″x14″x⅞″.

The best car heater on the market.

Prices

Polished Cast Aluminum.....$18.00
Cast Iron Black Enamel..... 12.00

COX BRASS MFG. CO. Established 1872 Albany, New York

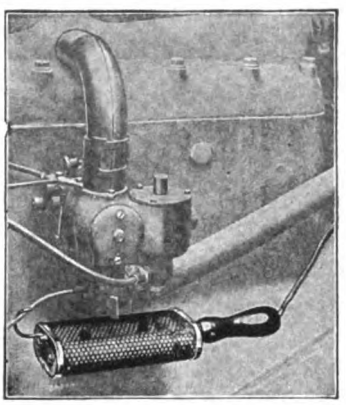
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$4.00 complete with 10 ft. cord

WINTER BUSINESS—Cold Weather Made Profitable

Here is the Blue Ribbon



Insures a Warm Carburetor After An All Night Stand

Presto Electric Heater

Improved Throughout for 1917 Sales

The new hook, operating on a swivel, allows the heater to be hung practically anywhere under the hood, on the fan near the radiator or under the carburetor.

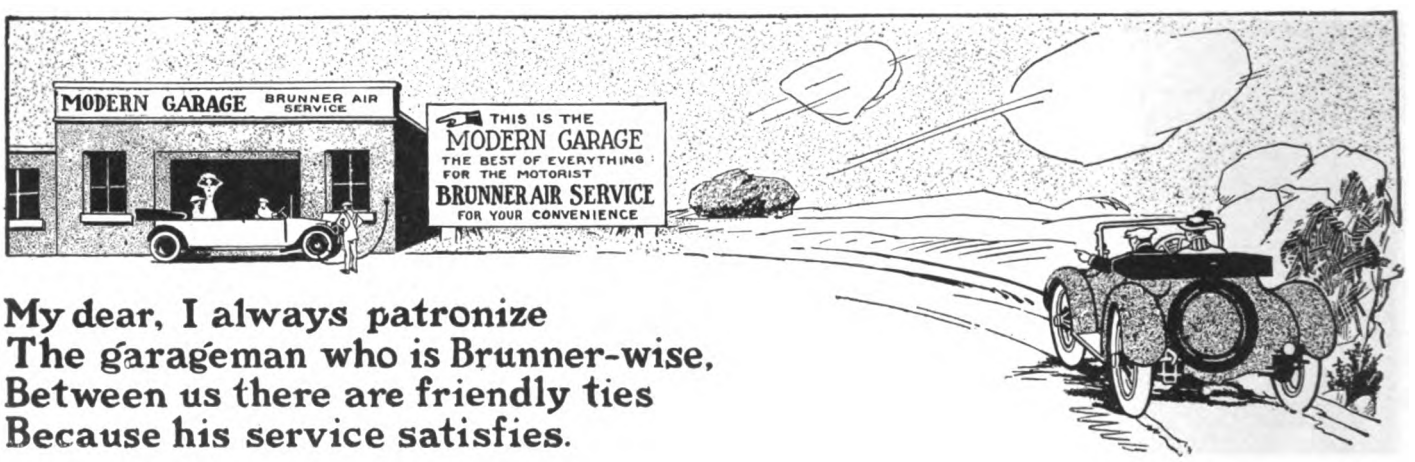
Attach the PRESTO Heater to the nearest electric light socket. Serves better and is cheaper than a garage heater, because it delivers the heat directly under the hood, where most needed.

All PRESTO jobbers and dealers have the PRESTO Heater.

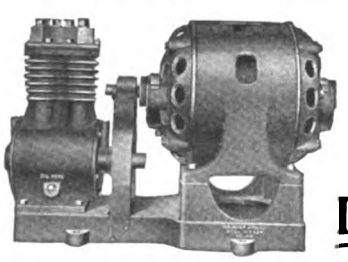


METAL SPECIALTIES MFG. CO., Inc., 338-352 N. Kedzie Ave., Chicago

Eastern Branch: 16-24 W. 61st St., N. Y. C.
Western Branch: 149 New Montgomery Street, San Francisco, California.



My dear, I always patronize
The garageman who is Brunner-wise,
Between us there are friendly ties
Because his service satisfies.

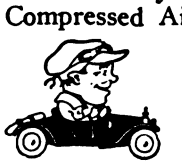


Mr. Garageman, the service that satisfies is the service which the motorists will patronize during the winter months. Brunner service would help you through the winter months and prepare you for spring. The garagemen using the Brunner Air Compressor have found it their one best asset the year around.

Investigate the BRUNNER Air Compressor

WE USE A BRUNNER AIR COMPRESSOR
FREE AIR
FOR YOUR CONVENIENCE

Your Jobber is no doubt a Brunner Jobber. If not, let us send you the name of the Brunner Jobber covering your town—also one of our catalogues and handbooks on Compressed Air. Let us help you to make your service one that satisfies.



BRUNNER MANUFACTURING COMPANY

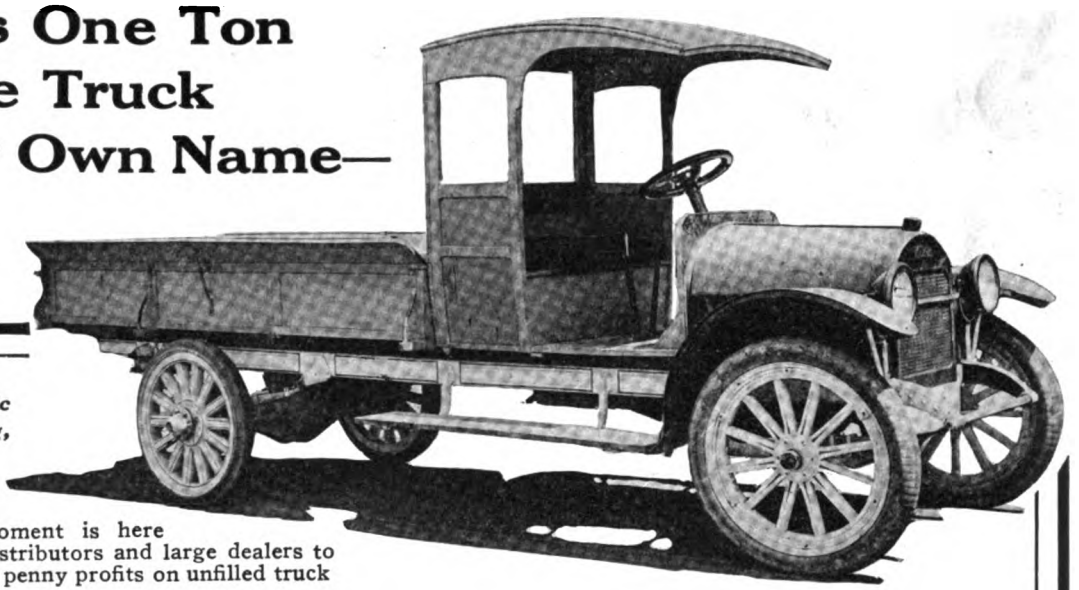
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Market This One Ton Worm Drive Truck Under Your Own Name—



130" wheelbase, electric lighting and starting, fully equipped.

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Our specialty—chasses or complete job of commercial or pleasure cars built standard or to your requirements.

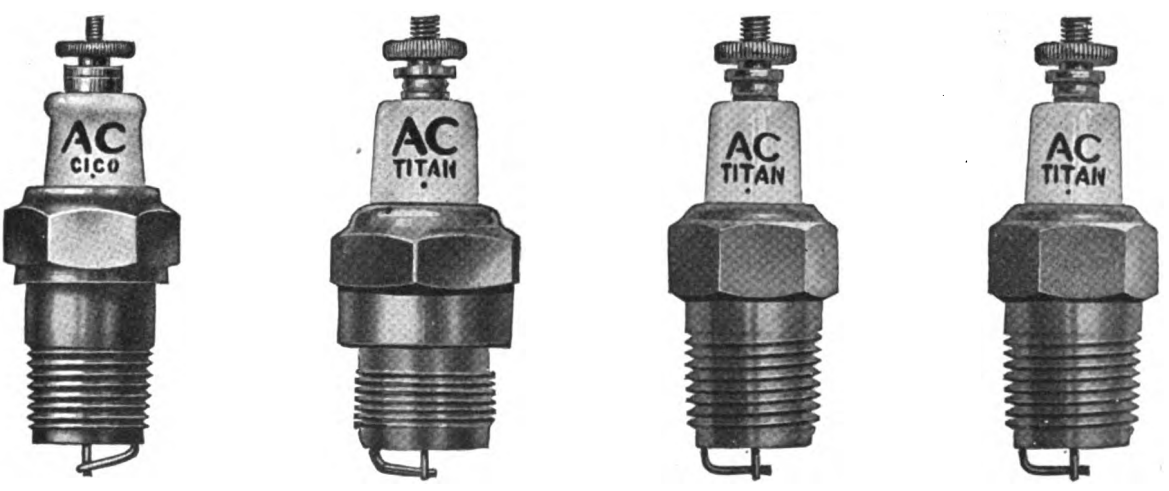
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Martinsburg, W. Va.

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The Standard Spark Plug of America



Special for Ford Cars A C CICO

⅜" Regular For Maxwells A C TITAN

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AC Plugs have proven to be the best under all conditions. That is why 80 manufacturers of Automobiles, Trucks, Tractors and Aeroplanes use them for regular equipment. The leading race drivers are using them. *Your* motor will not give its best performance unless equipped with AC. You will come to them in time. Why not buy a set *now* and note the improvement?

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New Departure Ball Bearings are designed and built for *big* and little jobs—for the *heavy* as well as light duties of industry.

These bearings are delicate only in their extreme precision. In service they are giants of strength and conquerors of friction.

The secret of their power is also in the design of the raceways—so that the balls are supported on definite areas—and because the steel is both tough and resilient, absorbing terrific shocks without becoming abnormally distorted.

New Departure Ball Bearings are worthy parts of the heaviest and most powerful trucks and motors.

"Engineering Bulletins"—125 data sheets with binder free to designers, builders and buyers of motor vehicles.

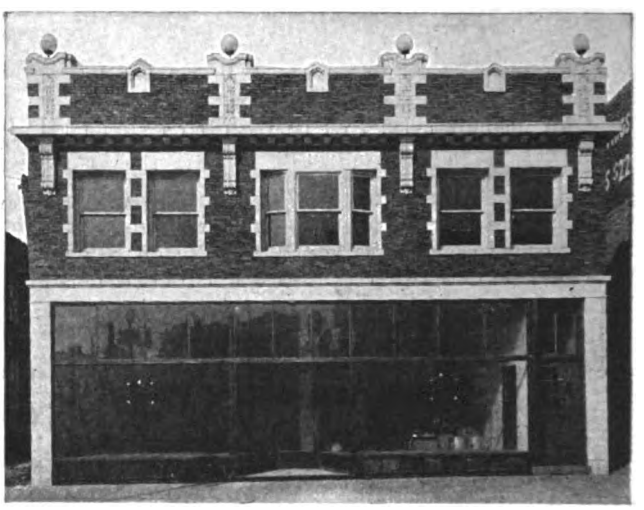
THE NEW DEPARTURE MANUFACTURING CO., BRISTOL, CONN
Conrad Patent Licensee.

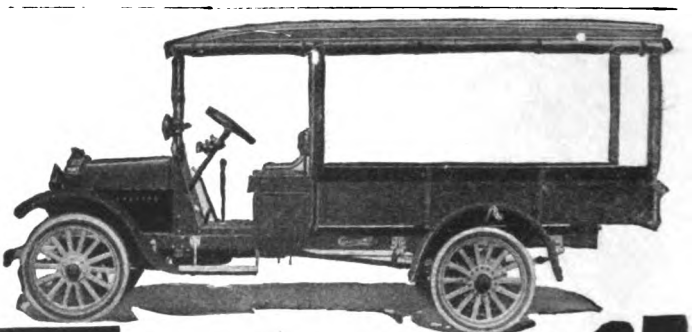
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MIDLAND TERRA COTTA

WILL TRIM YOUR SHOW WINDOWS

MIDLAND TERRA COTTA COMP ANY





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A Year Ahead *of* Other Trucks

The only truck having everything necessary on it—when you buy it

Three types of bodies for all models—Remy Starting and Lighting—Stewart Vacuum System—Pierce Governor—Windshield—Bumper.

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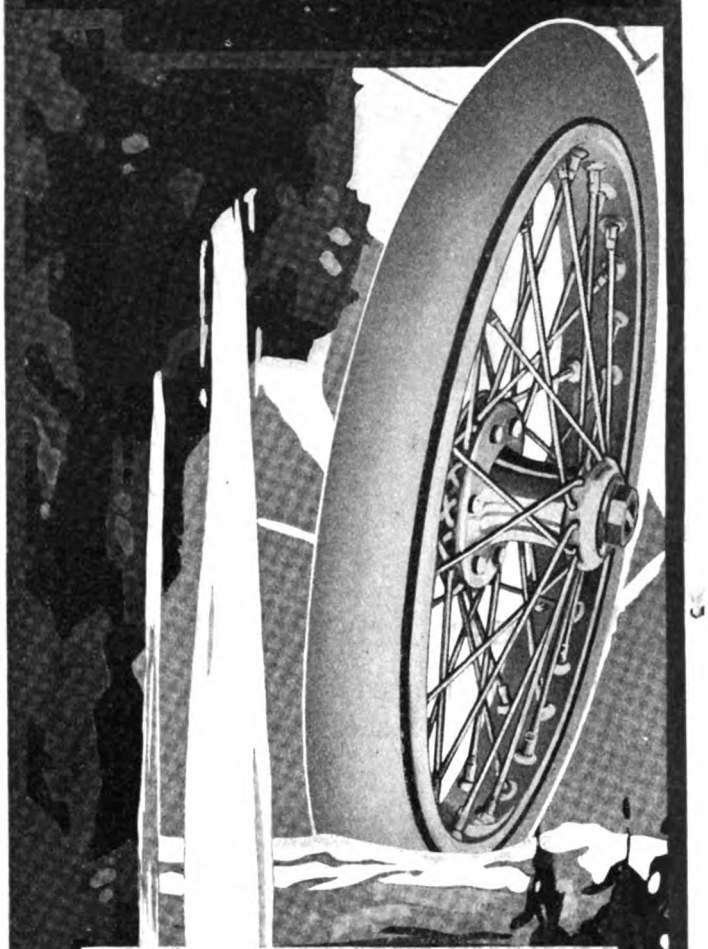
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Amazing Mileage

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Radiator and Hood Covers

are so made that the front may be rolled up so as to give a free circulation of air throughout the radiator.

When you stop, instead of hunting for a blanket to protect the engine, all that is necessary is to release the strap holding the radiator cover, allow it to fall down over the radiator and snap in place, thus giving protection against the cold, wintry blasts.

These covers are made to fit any make or model of automobile.

A complete catalog will be sent upon request.

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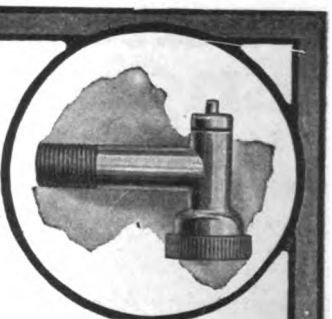
This machine will re-bore any cylinder block, one to twelve cylinders, two and one-half to eight inches in diameter, more accurately and quicker than it can be done in any other way. Your present mechanics can operate the

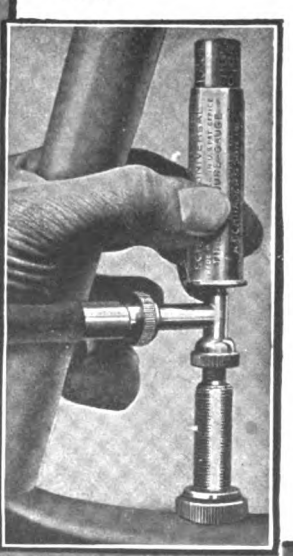
Marvel Re-Boring Machine

It will make BIG profits for you, double your repair business and turn shop losses into a handsome net profit. It is by far the most efficient, rapid, simple and accurate boring machine made. It will pay for itself quick. Write for details today.

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Minneapolis Minn.

You can't tell how much Bengal Tiger there is in a white rabbit until you put him on a meat diet





.....and you can't tell how many miles your tires can give you until you put them on a REGULATED, MEASURED, air diet. Just so many pounds pressure, no more and no less.

If you pumped up your tires every time they fell below the pressure specified by the tiremaker. they would last for the maximum distance. Don't say pumping is too much trouble. With a

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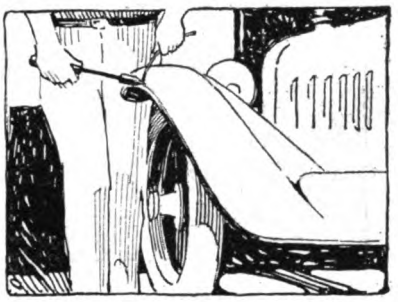
it is no trouble at all.

Ask your dealer to show you how it works.

Price Thirty-five Cents.

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Kester Crystal-Core Wire Solder

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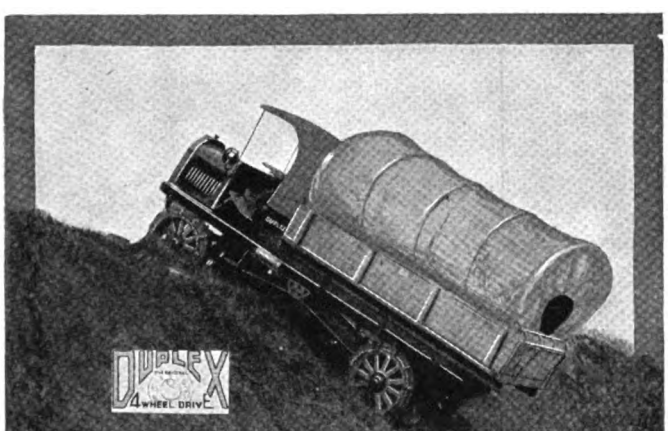
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Reliable Automobile Tools



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But there are only too many cars and trucks which are provided with tool equipment of the cheapest and most unreliable kind.

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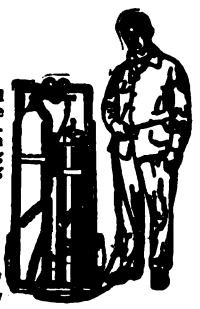
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Dissolved Acetylene
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Tire Pump
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WITH CARS BETWEEN $800 and $1300

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Price $10

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LONG HORN
KIMBALL AUTO JACK
G-P MUFFLER CUT-OUT
CASSCO ENGINE-DRIVEN TIRE PUMP
TENION RINGS

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Are Doubling Profits for Some Dealers
Write for Our Interesting Offer

These tires are sold without a guarantee. Write and ask us how we do it. They are positively *not* seconds, but first-class fresh casings.

	Non-Skid	Tubes		Non-Skid	Tubes
30x3	$7.55	$1.90	32x4	$14.75	$3.10
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32x3½	11.55	2.35	34x4	16.35	3.20

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Send us your order today, accompanied by cashier's draft on Chicago or New York, or money order. Large and small orders given immediate attention. *Write today for territory.*

Prices will positively be advanced November 1st. Place your order now

The Kimball TIRE & RUBBER CO.
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This "Straight Side" Type is Made Also in Clincher Type

A 1-INCH FIRING SURFACE

Greater Power
Quicker Acceleration
Less Carbon

BERGIE National SPARK PLUGS

10% to 20% More Mileage

Price $1.00 Each

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DORRIS MOTOR CAR CO., SAINT LOUIS, MO.
7-Passenger Touring Car $2785. Two Ton Truck Chassis $2285.

DORRIS

Jackson Rim Company
Jackson, Michigan

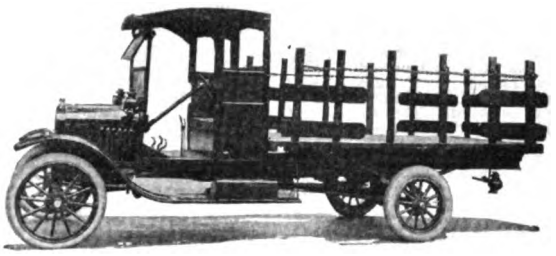
Demountable Rims

Plain Clincher and All Styles of Q. D Demountables, Straight Side or Clincher

Controlling Perlman Demountable Rim Patents

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Built and Sold on a Solid Paying Business Basis

OLSON Dealers know before they sign up for OLSON territory that they are backed by an organization in business to stay—managed by level-headed business men, financed to pay.

Consider the oldest paying unit truck, established to last, before you make an agency connection. Its record of successful dealers is at your disposal. *Write for our interesting offer.*

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FREE TOURING MAPS



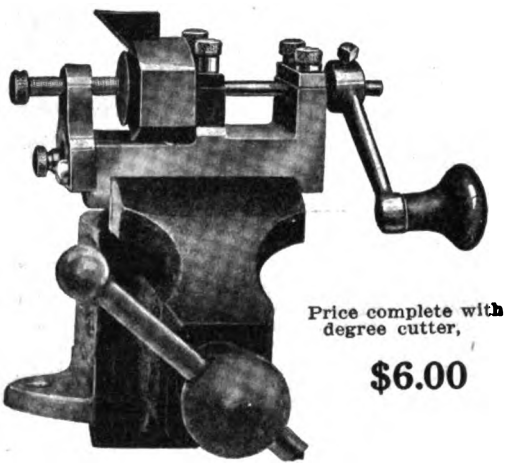
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AND MAIL TO
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CITY..... STATE.....

THE SIOUX WAY



Price complete with 45 degree cutter,
$6.00

Gives You More Profit From Jobs You Have Every Day

Cut down the cost on valve grinding and make a big profit on these jobs that are coming in every day. The greenest boy in the shop can do a perfect job in 1/20 the time required by the old methods, if you buy him

The Sioux Refacing Tool

Removes all carbon pits and other irregularities—makes the valve face at an accurate angle and perfectly centered. A very few minutes' grinding finishes the job. A real time-saver and profit-maker. Pays for itself in a very short time. Its perfect work makes satisfied customers.

Regularly equipped with a carbon cutter, but a high speed tungsten steel cutter can be secured for work with hard tungsten valves.

Other Sioux Time-Savers

The *Sioux Valve Seat Reamer* and the *Sioux Valve Grinder* complete the Sioux Trio—the most efficient Valve Grinding Outfit on the market. Live dealers carry them in all sizes and angles. Investigate today.

Liberal Discount to Dealers

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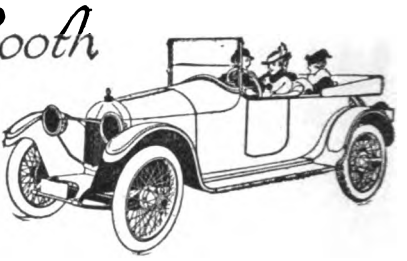
NEW PROCESS
ACCURATELY CUT METAL GEARS and Bailey Non Skid Non Stall Differential

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In both the four-cylinder and the eight-cylinder models, Scripps-Booth combines the height of motor luxury with light weight, in a way never before achieved. The resulting comfort and economy have given Scripps-Booth a unique position with a highly desirable clientèle.

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Indestructibility, Beauty, Tilting and Hand Warming are the Povasco features that place it beyond any other Steering Wheel. Our proposition on wheels and radiator caps is interesting to distributors and manufacturers.

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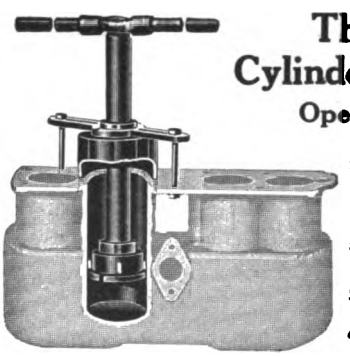
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The Pullmore Front Drive
TRUCK
is here
Union Arcade, Pittsburg, Penna.



The Universal Cylinder Reboring Tool
Operates on Any Car

Rebores cylinder from start to finish without slightest taper, and perfectly round. Automatic and quick in action. Takes as much as 1/16" oversize in one operation, and completed job will be a smooth finished and true to 1/1000 of an inch.

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1½ Ton Capacity
Has created the world's standard in motor truck value

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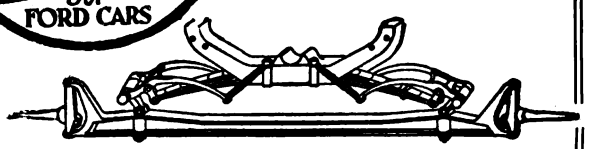
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$10 Per Set of 4



W & C

The Original Double-Arm Shock Absorber Makes As Much Difference As Pneumatic Tires on Fords

Installing a set of W & C double-Arm Shock Absorbers is as good as substituting pneumatics for a set of hard rubber tires. Their resiliency reacts to the immediate advantage of both passengers and mechanism.

They are as desirable on Ford cars as air-filled tires. You *know* how desirable *that* is.

Ask your dealer to-day—and say "W & C."

Some territory still open that needs live dealers. WRITE.

P. H. WEBBER COMPANY
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Gives More Power Greater Speed

IMP CARBON CHASER

Better Ignition and Uniform Combustion

The New Fuel Element

SAVES 25% GASOLINE
ELIMINATES CARBON

One IMP Tablet in every FIVE Gallons of Gasoline will do the work. Retail price east of Rockies 75c. can of 20 tablets. Exceptional discount to Jobbers and Dealers.

Convince yourself, Mr. Dealer—send for FREE TRIAL
And Attractive Proposition

IMP CARBON CHASER CORP.
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Buy Accessibility

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You will be a happier dealer if you are selling an accessible car. Write today.

$850 to $950

INTER-STATE MOTOR COMPANY
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HAYES MF'G. CO. HAYES DETROIT, MICH.

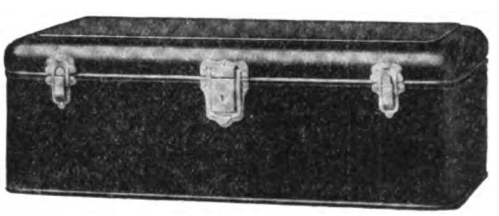
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Stock Sizes, Inside Measurements

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A	13½	8	10¼	2.75
D	16⅝	9	10¾	3.00
J	18	8	7	2.50
A T	20	8½	10¼	3.50
F	22	9	10	4.00
H-(Special Ford Size)	22	9	7	2.50
W	24	10	9	4.50

Only the most improved methods of construction, the highest grades of sheet steel, enamel and lock equipment are used in the manufacture of HAYES Tool and Battery Boxes. *Modern Facilities, Efficiency and System* in the different factories assure all users of the same high *Quality* for which HAYES products are noted.

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"STYLE H"—22x9x7

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It has been our endeavor to create a commercial vehicle that would excel first of all in the quality of the material used, and, second, in the economy of its operation.

Our reputation for producing the most lasting truck is recognized by our many users.

We offer for your convenience the following sizes:

1½-ton 3½-ton
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Starts the Engine Cold

Ford cars are difficult to start in cold weather without

Red Head

Priming Plugs

A few drops in the cylinder thro' the priming plug—and the engine hums.

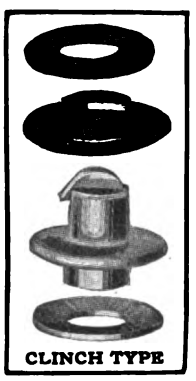
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The easiest operated—non-rusting, non-tearing fastener. *Write for samples.*



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Stop Losing Money on Used Cars

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National Used Car Market Report Service

Published by

The Chicago Automobile Trade Association
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THE EISEMANN MAGNETO CO.
Sales and General Offices: 32-33rd St., Brooklyn, N. Y.

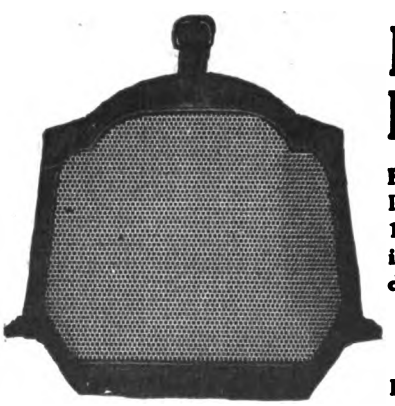
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Dependable

Standard
Equipment for
117 Manufacturers



Fedders Radiators

Fedders quality is largely the result of 18 years' specializing in radiator production.

Fedders Manufacturing Co.
Buffalo New York

DEMAND DUTCH BRAND

Demand Dutch Brand Rubber Cements and Auto Chemical Specialties of your jobber. One Dutch Brand Product helps sell all the rest of the line. Build up an endless chain of sales. Stock a trial order. Handsomely illustrated catalog of complete line sent on request.



"Look for the Dutch Girl on the Label"

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Oil-less

"NIGRUM" (Impregnated Wood) "BOUND BROOK" (Graphite-and-Bronze)

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All genuine Graphited Oil-less Bushings have always been made at Bound Brook, U. S. A

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last approximately six months longer than the average battery. They are about 15 per cent more powerful in proportion to size and cost.

This is why their sale is now increasing on an average of over 60% every four weeks—a record no other battery has ever approached.

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Eastern Branch, 68th and Broadway, New York City

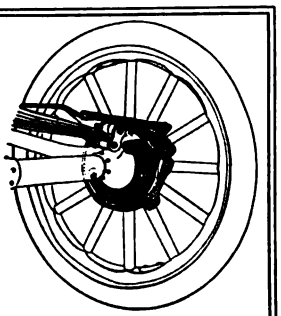
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One dealer in a town of 3000 people installed Forty Sets of "The Improved Emergency Brakes" last March. Another dealer in a crossroads town installed twenty-five sets this summer.

All you need to do is to show a Ford Owner this Brake and he buys it.

Simple to install, no holes to drill. Why not cash in on this fast-selling accessory?

Write for our Disc. and Big Selling Plan.



Retail price $10.00 per Set

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SEXTONS CASTOR MOTOR OIL

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Send for Catalog. Dealers—Distributors, Write
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Carry a Few in Stock this Season

Next season you will do it without being told.

The need for trailers is so general that they are easy to sell. They get easier to sell every month as people get used to the trailer idea. The trailer has come to stay because it is the only logical way to solve carrying problems.

The illustration shows Model No. 41 (our smallest) one-half ton capacity. Price $85.

The Ohio Trailer Co.
58 Doan Avenue
Cleveland, Ohio



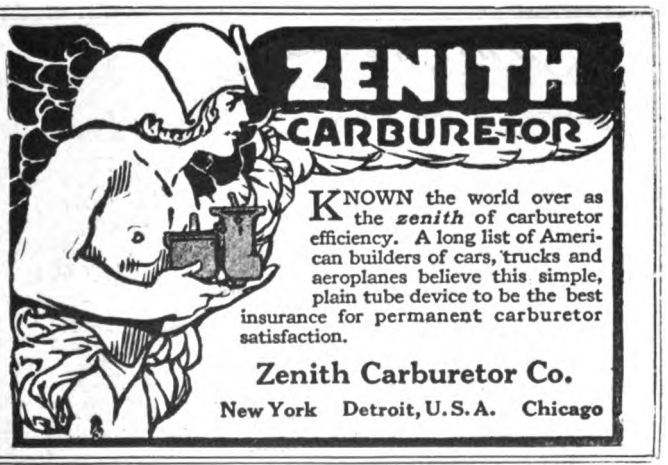
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The MATERIAL for SHIMS

Extract from Military Truck Specifications

"The main and connecting-rod bearings shall be provided with laminated metallic shims, made up of sheets of equal thickness. The shim sheets shall be not more than 0.002 in. thick."

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KNOWN the world over as the *zenith* of carburetor efficiency. A long list of American builders of cars, trucks and aeroplanes believe this simple, plain tube device to be the best insurance for permanent carburetor satisfaction.

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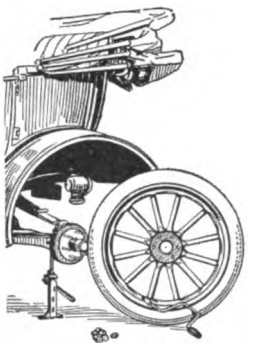
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Nothing better on the market, sells itself wherever demonstrated, better than a demountable rim. It enables anyone to change wheels in four minutes or less, does away with all fear of punctures and is interchangeable with any wheel on a Ford car.

Write at once for complete details and Special Dealer's Proposition



Simplicity Wheel Co.
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Standard Equipment on Packard Marmon National Haynes Kissel Pathfinder Etc

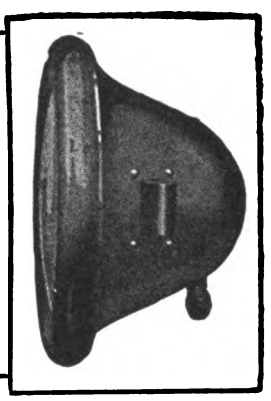
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Rockford, Illinois

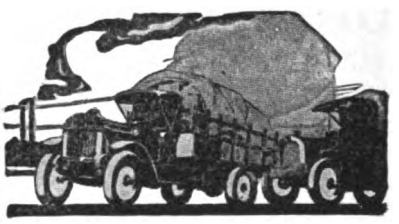
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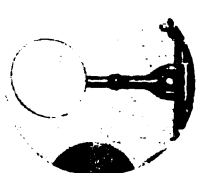


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A Complete Standard Line. Every JOBBER and DEALER Interested in Profits Should Stock.

Send for illustrated catalog and sales proposition.

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Make Old Cars Look Like New.
Used by Owners, Garage Men, Chauffeurs and Auto Painters.

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COLUMBUS, OHIO, U. S. A. Sole Makers





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Tire Saving Jack

To keep weight of car off tires when not in use. The part which comes in contact with the car is made of wood and cannot injure paint.

Easily adjusted to any height wheel. Jack is easily raised and lowered and allows car to stand firmly. Footrest 5 x 8.

Made from best screw polished round steel, half-inch diameter. Finished in black enamel. Set of four, weighs 24 lbs.

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"The Most Advanced Truck in America"

Its magnetic transmission effects a great saving in wear and tear on the motor, chassis and tires —and substantial economy in operating costs.

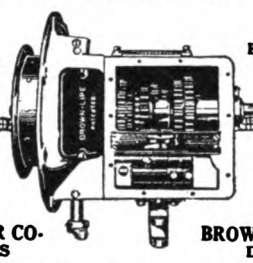
Two Ton Truck....$5300
3½ Ton Truck.....$4000

Bourne Magnetic Truck Company
Sedgley Avenue, at North 17th Street
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BROWN-LIPE TRANSMISSIONS

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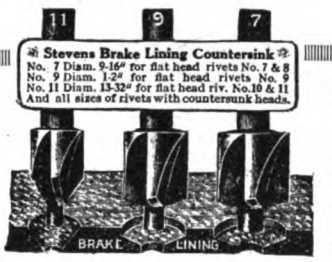
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5/16" shank, satisfactory for either hand drill or power press.

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insure your making a clean job of replacing brake lining. The countersink cuts a clean even hole in any style of clutch or brake lining.

Made of tool steel carefully tempered and ground. Furnished singly if desired.

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7 passenger with divided front seats	$2595
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Prices f. o. b. factory—subject to change without notice

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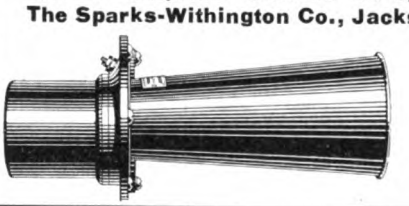
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Sparton Gasoline Vacuum System.
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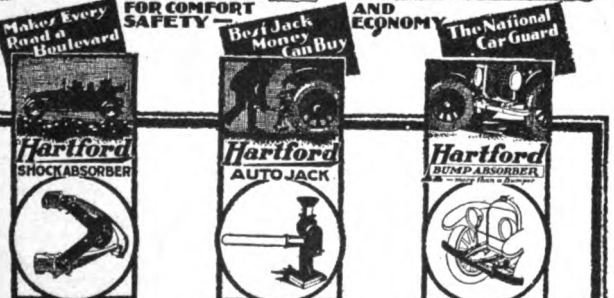
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Makes Every Road a Boulevard — FOR COMFORT AND SAFETY — Best Jack Money Can Buy — AND ECONOMY — The National Car Guard



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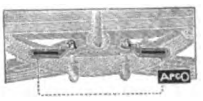
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Metal, Rubber and Fabric welded into one unit. Guaranteed for one year.
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List Price seventeen cents. Dealers in quantity, one-third off. Ask your jobber.

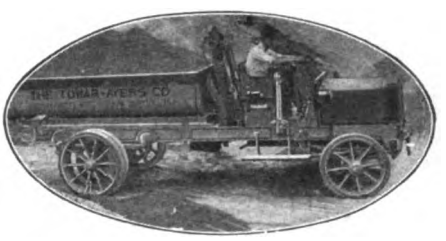
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2-TON 3½-TON 4-TON 5-TON

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United Motors Company

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The Name "WESTCOTT" on the Handle



It shows you are carrying the best wrench in the world.

The "Westcott" is the original adjustable "S" Wrench. It gives the service. Mechanics want them because they know that fact.

Malleable iron handle—Forged Steel Jaw.

Sizes 6 to 14 in. (opens ¾ x2 in.) Price per doz., $8.00 to $21.

Get them in your catalog

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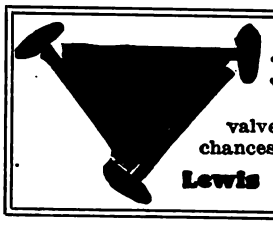


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We make valves exclusively—special heat-treated valves that "stand up" in service. Don't take chances. For anything in valves, write

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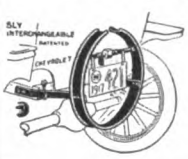
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make friends for dealers because car owners have no cause for suspicion when you show them what they are getting.

GUARANTEE LIQUID MEASURE COMPANY

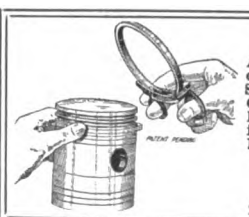
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The strap kinds are obsolete and unsightly. The Sly Interchangeable—Ford or Chevrolet quickly—neatly does the trick—take any casing or demountable—cost no more. Beware of imitations. If your Jobber doesn't list write us for complete catalogue—of real Carriers and "Better Springs."

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A rust proof tool guaranteed to remove rings (cut right or left) from pistons. A NECESSITY IN EVERY AUTO SHOP. A BOON TO EVERY CAR AND MOTORCYCLE OWNER. Sold thru jobbers and dealers only. Retail Price $1.50. Liberal discounts to trade. Your jobber has it—if he hasn't a sample sent direct on receipt of $1.00. Money refunded if not satisfactory.

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The far-reaching Guarantee under which

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are sold—years of successful usage *back* of them—the new, improved principle of construction give you *positive protection* against imperfections—breakage and bother.

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Write for Trade Discounts and Big Catalog C-1917 listing 500 different styles.

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Improved Wrapped Tread Method Used by Big Tire Manufacturers

Does better work than the big, high-priced vulcanizing outfits costing 3 to 5 times as much, and does it at a lower cost. A boy can use it. It's the only vulcanizer that has Automatic Heat Control, and, therefore, can't undercure or overcure a tire. No watching or regulating. Steam or electric heat.

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Send at once for the new Shaler catalog, the most complete Vulcanizer Catalog ever published, and ask for the low discount price of the Shaler Tire Repair Outfit. We will also send repairmen our book, "Common Sense About Tire Repairs," on request.

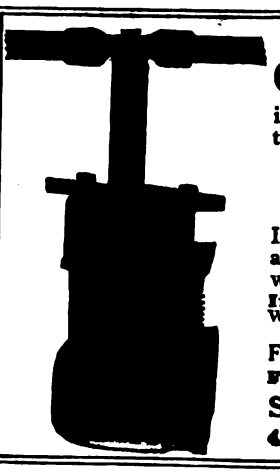
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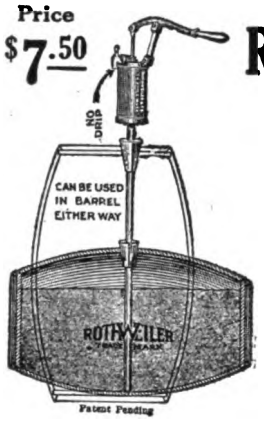
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is adjustable and will rebore practically all makes of
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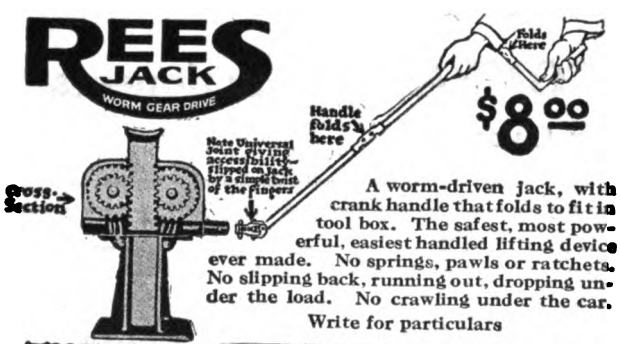


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Our offer is liberal and Keystones sell readily.
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$8.00

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Body building specialists for 25 years. Beautiful finish.
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New STROMBERG Does it!
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belonging to the estate of the

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Inventory Value over $300,000

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Details of sale later.

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30x3½	9.85	2.15	34x4½	20.75	4.00
32x3½	11.55	2.25	35x4½	22.75	4.10
31x4	14.35	2.35	36x4½	23.75	4.15
32x4	14.75	3.05	35x5	27.20	4.95
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Standard Makes Guaranteed 3500 Miles.

30x3	$ 7.75	31x4	$14.75	34x3½	$13.25
30x3½	10.75	32x3½	11.75	34x4	17.50
31x3½	10.75	32x4	14.75	35x4½	23.75
33x4	15.25			37x4½	26.00
35x4	$19.50				
36x4	19.75				
36x4½	24.50				

Satisfaction guaranteed or money refunded.

We sell parts for most make automobiles.

Bosch magnetos D4, $15; DU4, $17.50; D6, $17.50.

INDIANAPOLIS AUTO PARTS CO.

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REAL TIRE BARGAINS

Our tires are new, fresh stock which have only slight surface blemishes, which do not affect their wearing qualities. We cannot furnish a mileage guarantee at prices quoted, but every purchaser must be a satisfied customer.

Size	Plain	Non-Skid	Tubes
30x3	$6.75	$8.75	$2.20
30x3½	8.75	10.75	2.50
32x3½	10.50	11.75	2.80
34x3½	12.75	13.50	3.00
31x4	13.75	15.25	3.25
32x4	14.25	15.75	3.35
33x4	14.75	16.00	3.40
34x4	15.50	16.50	3.60
35x4	15.75	17.00	3.75
36x4	16.50	18.00	4.00
34x4½	21.00	24.00	4.50
35x4½	21.50	25.00	4.50
36x4½	21.75	24.00	4.75
35x5	23.00	25.00	5.00
36x5	23.50	26.50	5.50
37x5	25.00	26.75	5.75

TUBES GUARANTEED

All goods shipped promptly; $1 deposit required with each tire order. Balance C. O. D. subject to examination.

VICTORIA TIRE & RUBBER CO.
Dept. A, 1331 Michigan Ave., CHICAGO, ILL.

RELIABLE USED TIRES

ALL STANDARD MAKES

Remember This: These tires were originally guaranteed for 3000 to 5000 miles. Many have gone less than 600 miles. It does not take much figuring to see the mileage they are still good for. You will save money on your tire mileage. Offered at these remarkably low prices while they last:

28 x 3	$2.75	36 x 4	$7.50
30 x 3	2.85	33 x 4½	8.00
30 x 3½	3.95	34 x 4½	8.00
32 x 3½	5.00	35 x 4½	8.00
34 x 3½	6.00	36 x 4½	8.00
31 x 4	5.00	37 x 4½	8.50
32 x 4	5.50	35 x 5	9.00
33 x 4	6.50	36 x 5	9.00
34 x 4	6.00	37 x 5	9.00
35 x 4	7.00	38 x 5½	12.50

10% extra for Non-Skid. C. O. D. orders shipped same day. 5% off when cash accompanies order. Goods shipped C. O. D. upon receipt of 20% of order.

CAMBRIA TIRE EXCHANGE, Inc.
21-A Cambria St. Boston, Mass.

TIRES

NEW FRESH STOCK

33 x 4 Plain Clincher	$11.50
34 x 4 Plain Clincher	12.75
35 x 4½ Plain Clincher	17.25

Prices of Other Sizes on Request

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1429 Michigan Ave., Chicago, Ill.

BARGAINS IN FACTORY SECONDS

28x3	$9.00	34x4	$15.50
32x3½	11.50	35x4	16.00
33x4	14.50	36x4	17.50

Add 10 per cent extra for non-skids.

Public Service Tire and Rubber Co. of N. J.
270 Halsey St., Newark, N. J.
251 E. Jefferson Ave., Detroit, Mich.

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GUARANTEED 3500 MILES

30x3	$9.87	33x4	$20.89
30x3½	12.77	34x4	21.45
32x3½	14.98	35x4½	31.17

NON-SKID

We absolutely guarantee every tire for full mileage.

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"EXCELLENT FOR SERVICE"

New Tires and Tubes at OLD PRICES and Guaranteed First Quality

LOOK AT OUR PRICES, MR. DEALER

	List Price		Your Wholesale Price	
	Tires	Tubes	Tires	Tubes
30x3	$14.10	$3.05	$7.75	$1.68
30x3½	18.25	3.75	10.04	2.06
32x3½	21.40	3.85	11.77	2.12
31x4	28.00	4.75	15.40	2.61
32x4	28.60	4.85	15.73	2.67
33x4	29.85	5.00	16.41	2.75
34x4	30.65	5.15	16.86	2.83
35x4½	43.10	6.45	23.60	3.55

These tires are built to give entire satisfaction.

All orders must be accompanied by a deposit of at least 10% to insure immediate shipment. Balance C. O. D., subject to examination on request.

SPECIAL OFFER

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Wadsworth, Ohio

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Electrical and Battery Man
who is competent to manage this department and do high grade work. Permanent and good salary to satisfactory and trustworthy man.
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Position Wanted as Buyer and Manager of Automobile Accessory Jobbing House, capable of handling large business, with modern methods, can assure increase of sales. Am employed but wish to change. Address Box W520, care of Motor World.

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15-in. Gleason automatic gear cutter. Bevel.
30 x 7-in. Gould & Eberhardt automatic spur gear cutter.

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10 x 4 Seneca Falls, pan bed and chuck, complete.
11 x 5 Seneca Falls, BRAND NEW, with chuck, complete.
11 x 5 Seneca Falls, with chuck, complete.
12 x 5 Davis, semi-quick-change, complete.
12 x 5 Young, with chuck, complete.

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Lowest Prices

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14 x 6 Lodge & Shipley, geared head, single pulley drive, complete with taper attach., quick-change gears and chuck.

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One 4-ft. Plain Brand New Mueller Gear Box Drive, Heavy Duty.

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Three No. 3 Kempsmith Universal Brand New, complete.
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Two No. 53 National Acme, single pulley drive.
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1	1	Westg.	AR	New	1750
1	1½	Kimble	Var.Sp.	Used	100-2000
1	2	Wagner	BA	Used	1800
1	3	Century	REP	New	1800
1	3	Westg.	AR	Used	1740
1	5	Wagner	BA	Used	1750

MOTORS—2-PHASE, 60-CYCLE, 220-440 VOLTS

1	1	Westg.	CSA	New	1800
2	2	G.E.	K	Used	1200

MOTORS—3-PHASE, 60-CYCLE, 220-440 VOLTS

6	1	Allis-Ch.	AN	New	1800
1	1	G.E.	K	Used	600-1800
3	2	Westg.	CSA	New	1800
1	2	Westg.	CS	New	900
4	3	Westg.	CS	New	1800
1	3	Westg.	CS	New	900
6	3	Allis-Ch.	AN	New	1800
4	5	Westg.	CS	New	1200
2	5	Howell	SC	New	1200
2	7½	Westg.	CS	New	1800
3	7½	W.E.	KT	New	1200
5	7½	Westg.	CS	New	1800
2	10	Howell	SC	New	1200
1	10	Allis-Ch.	AN	New	720
1	15	Allis-Ch.	AN	New	600
1	15	G.E.	K	Used	1800
2	15	Allis-Ch.	ANY	New	900
1	20	Westg.	CS	New	1200
2	20	W.E.	KT	New	900
3	20	W.E.	KT	New	1200

MOTORS—DIRECT CURRENT—220-VOLT

1	¼	C.W.	SH	Used	720
1	2	G.E., G.E. grinder		Used	1650
1	2	Richmond	SH	Used	1600
1	3½	G.E.	CE	Used	800
1	5	G.E.	SH	Used	1650
1	7½	Richmond	RE	Used	1500
1	7½	Eddy	SH	Used	1000
1	10	Westg.	M	Used	1250
1	15	C.W.	CM	Used	800
1	15	C.W.	SH	Used	725
1	20	Ft. Wayne	B	Used	820
1	25	Westg.	Sec. hoist	Used	750

AIR COMPRESSORS
New—Belted Types

No.	Size	Class	Capacity, Cu. Ft.	Pressure, Lbs.
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2	7x6	A-E	54 to 80	100
1	8x6	A-E	60 to 105	70
7	8x8	A-E	79 to 116	125

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METAL STAMPING AND PUNCH PRESS WORK
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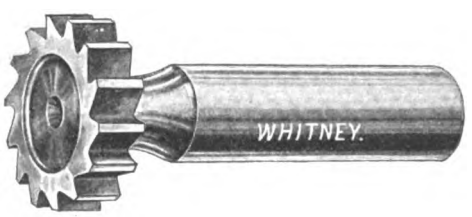
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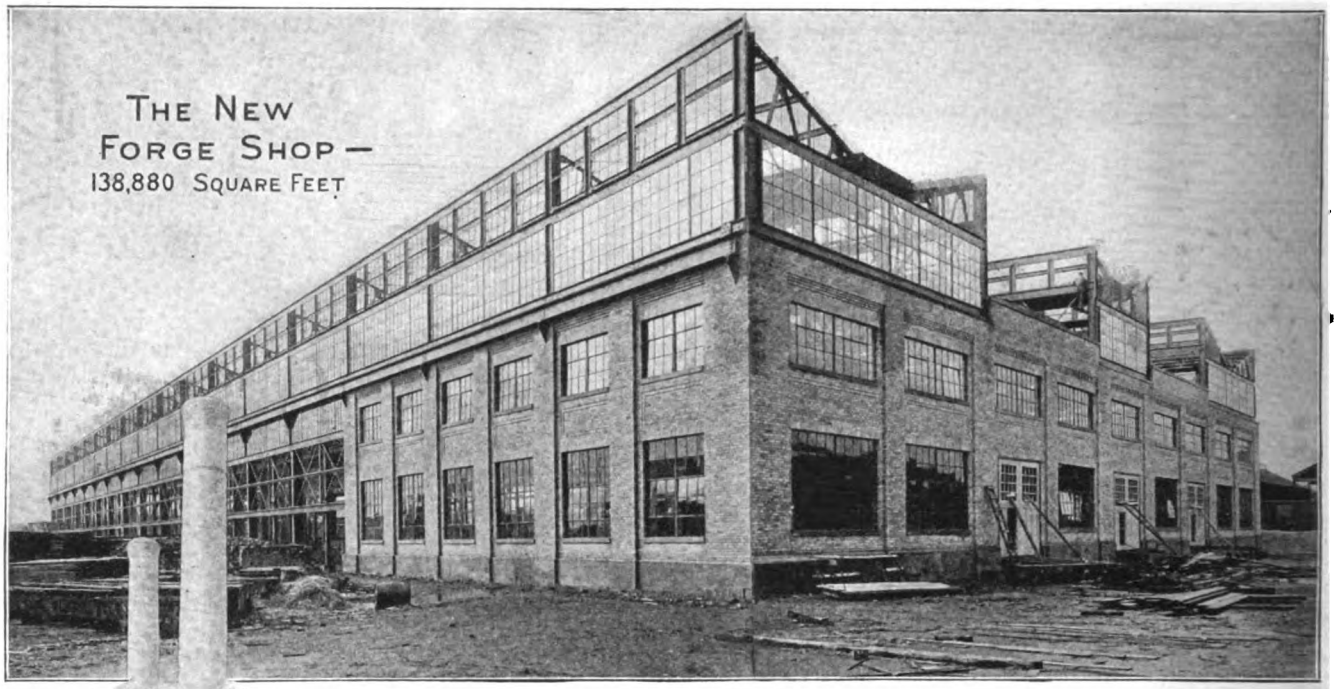
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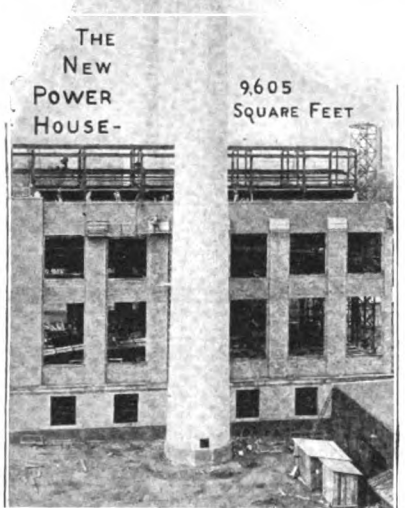
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These photographs of new buildings rapidly approaching completion at the Studebaker plant in South Bend tell a story of complete confidence.

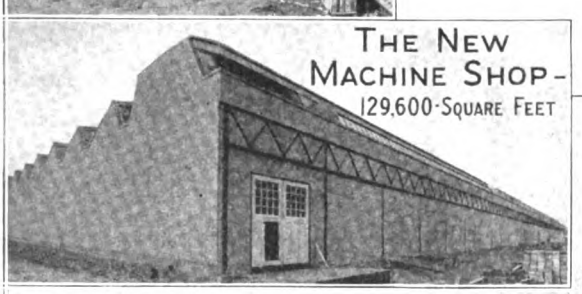
This addition of 401,061 sq. ft. of floor space to the Studebaker factories, already among the largest in the world, involves an expenditure of approximately $2,000,000.

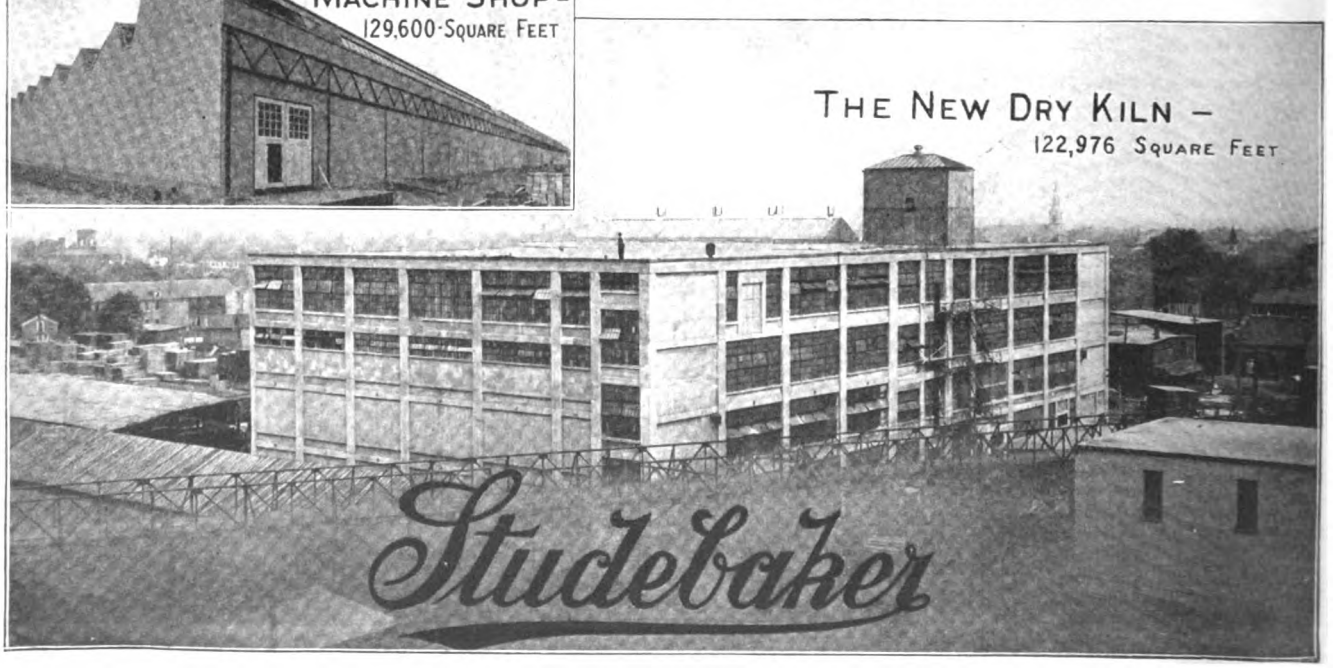
The work is being pushed to completion in accord with the fixed Studebaker policy of continually improving its manufacturing facilities. It is just another evidence of the solidity, permanence and constant growth of Studebaker, in which Studebaker dealers find increasing satisfaction and success.

STUDEBAKER

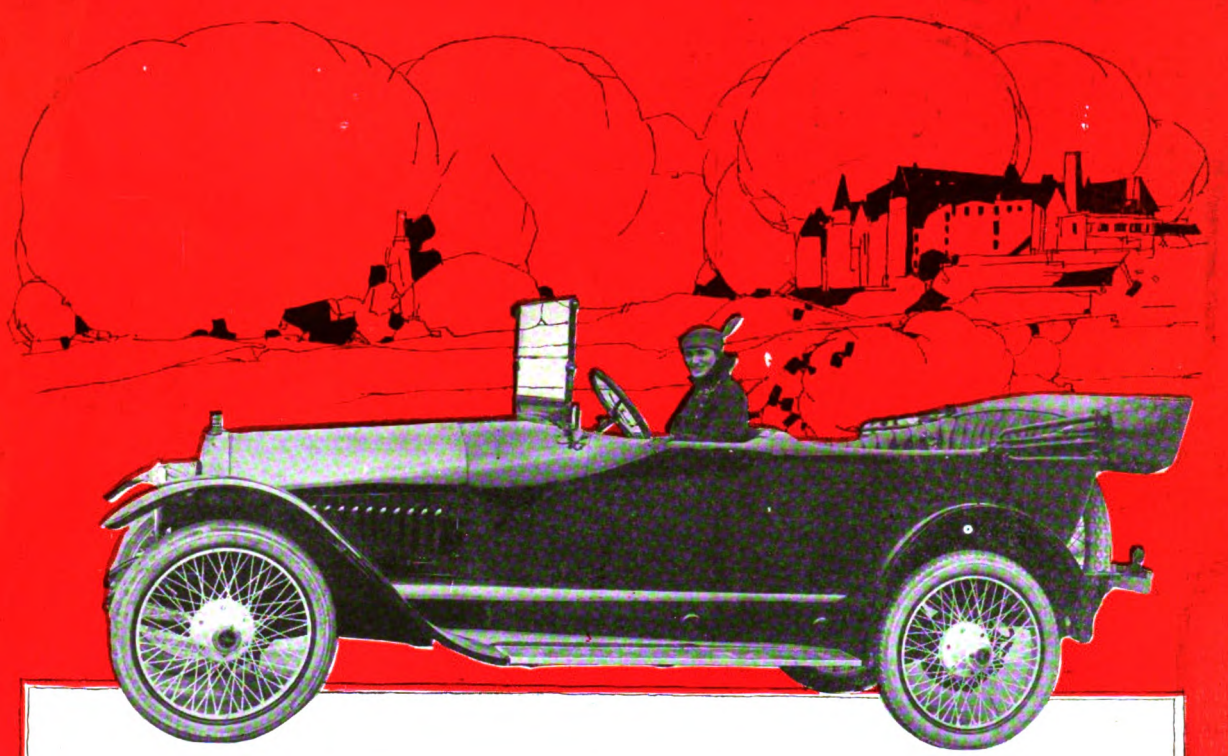
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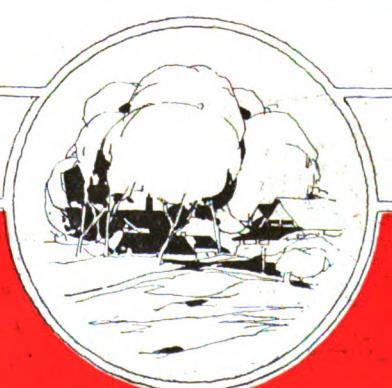
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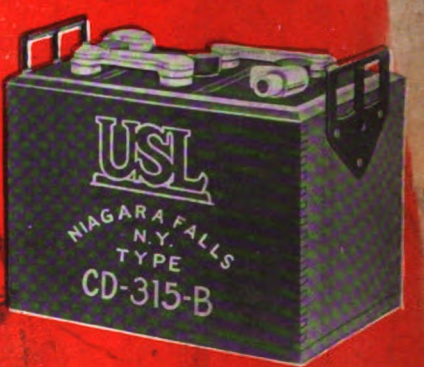
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WHY MY BUSINESS FAILED—*See Page 6*

MOTOR WORLD
for
DEALERS, JOBBERS AND GARAGEMEN

Volume LIII
No. 6

New York, November 7, 1917

Ten cents a copy
Two dollars a year

Note How Hudson Dealers Prosper

Hudson Dealers make money. Wherever Hudsons are sold, the Hudson Dealer dominates. He is the leader in his community.

He is envied and often referred to by his less successful competitors as "lucky." It is not "luck," however, but sound and sane merchandising that has made these years of big profits possible.

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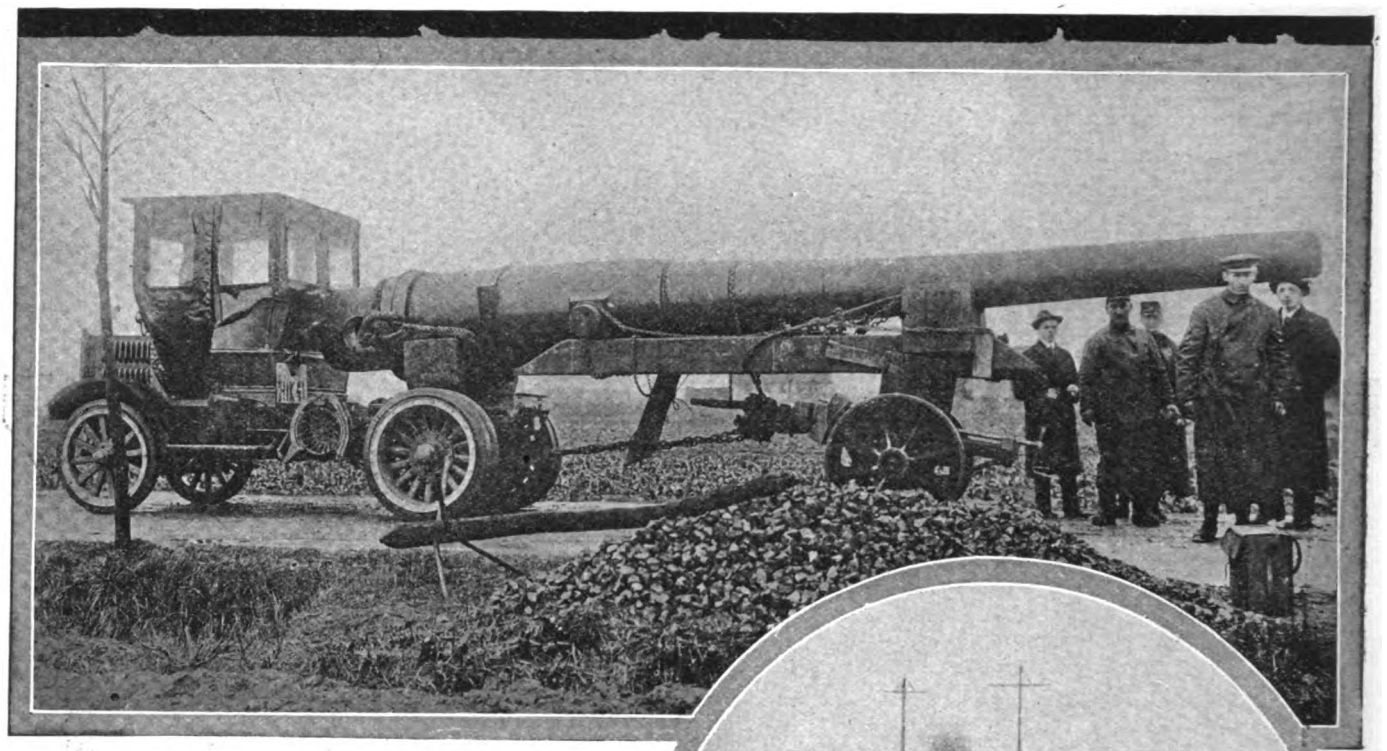
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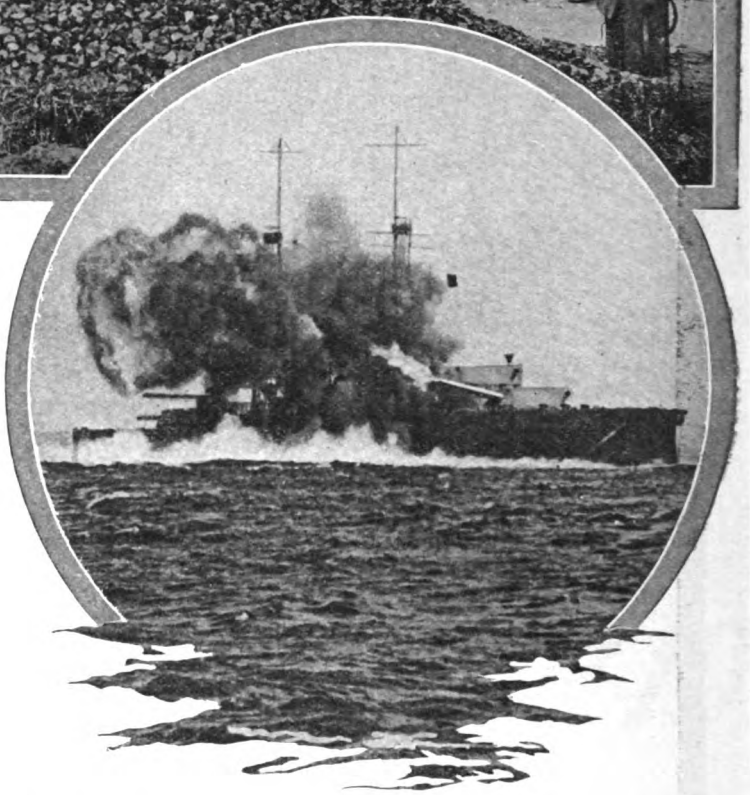
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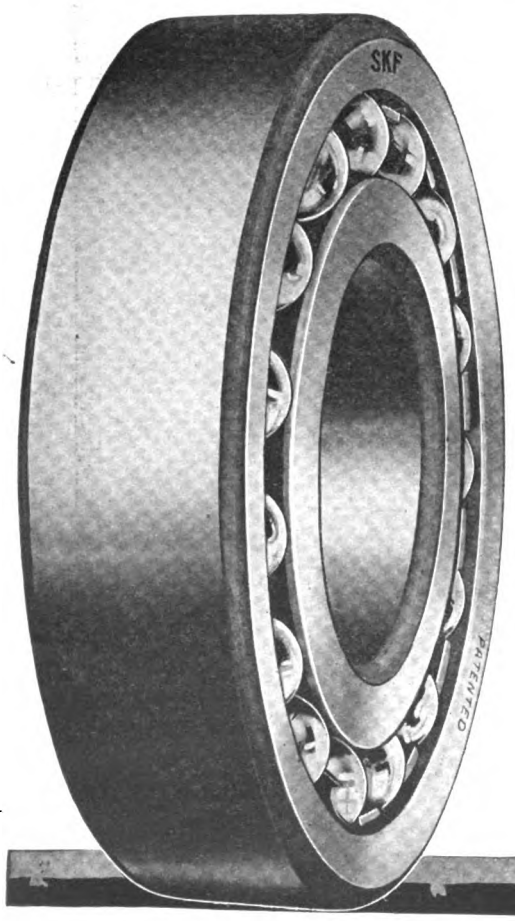
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HARTFORD CONN.

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MOTOR WORLD
for DEALERS, JOBBERS AND GARAGEMEN

PUBLISHED EVERY WEDNESDAY BY

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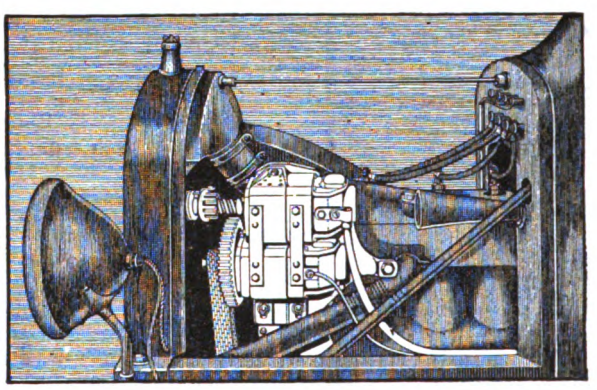
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MOTOR WORLD for DEALERS, JOBBERS AND GARAGEMEN

Vol. LIII New York, U. S. A., Wednesday, November 7, 1917 No. 6

Washington Aims Destructive Blow at Dealer Industry

Proposed to Cut Passenger Car Production 40 to 75% Because of Alleged Steel Shortage and on Grounds That Passenger Cars Are "Luxuries and Non-Essentials"—Action Only Temporarily Held Up

WASHINGTON, D. C., Nov. 3.—Action of the War Industries Board to reduce the production of passenger cars from 40 to 75 per cent by prohibiting the shipment of alloy steel to plants for the manufacture of passenger cars has been temporarily halted, and any and all conversion of factories manufacturing passenger cars into plants for manufacturing war munitions, it is now assured, will be regulated by a special committee representing the motor car industry and appointed by it.

This action has all taken place within the last three days in Washington, where the board of directors of the National Automobile Chamber of Commerce and the board of directors of the Motor and Accessory Manufacturers have been in session for several days endeavoring to lay plans to handle the matter.

The unexpected situation came as a flash from a clear sky, not a single motor car maker being aware of what the War Industries Board, which controls the distribution of all raw materials, had in mind until it came to light that all four companies which manufacture alloy steels for the motor car industry had been ordered to stop all shipments for passenger car work.

The steel companies in this work are Carnegie, Carpenter, Central and United Alloy. It was the last company that protested to the War Industries Board against the ruling, and it was this protest that brought the entire matter into the light of day, and brought the motor car industry face to face with one of the gravest problems with which it has had to grapple since the world war started.

The entire motor car and accessory manufacturing industry is fighting the order on the ground that if there is an immediate shortage of alloy steel there is not such a crisis as to warrant restricting passenger car manufacture.

Makers of steel have declared that their factories are only working at 80 per cent capacity and as such the

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situation is not one to call for restricting the industry, but rather one to increase the production of steel.

One steel maker has admitted that he can increase steel production 10 per cent in three months. This would be more than enough to care for any visible shortage, because the automobile industry, which is the third largest manufacturing industry in the country, **only consumes 5 per cent of the total steel output of the country.**

The shortage of steel seems entirely a question of efficiency of labor. The work of producing more alloy steel is not held up because of a shortage of materials such as chromium, vanadium or other chemicals needed in the steels, but rather by labor in the steel mills, and if one steel maker has agreed that he can increase production 10 per cent in three months if given his way and not restricted by government price regulations, it would seem that the present situation is entirely temporary and it is expected that the committee representing the motor car and accessory industry will be able to bridge over the impending crisis.

Schwab Nails Steel Shortage Story

Charles M. Schwab, the greatest steel authority in the country, declares that there is no shortage of steel that would warrant shutting down on the manufacture of passenger cars. He should know. His word should be taken in preference to that of many in Washington who are not nearly so close to the situation as he is.

The present act of the War Industries Board in aiming to restrict the manufacture of passenger cars from 40 to 75 per cent was brought about, it is believed, by many in the passenger car industry, by a lack of knowledge of actual conditions.

It is honestly believed that there is no existing condition that warrants any such action and it is the hope of the industry through its special committee to show this to the War Industries Board.

With this object in view, a meeting was held in this city yesterday at which the entire directorate of both the N. A. C. C. and the M. A. M. met with the War Industries Board and asked that the order prohibiting alloy steel to the makers of passenger cars be withheld until there was a chance of presenting the facts in the case.

The motor industry offered to appoint a committee of three or five that would represent all departments of the industry and that would locate in Washington and work with the War Industries Board in advising it on all matters of materials as related to the industry.

The War Industries Board did not agree to stop the shipments of alloy steel if it became necessary in its judgment to do so. That is where the matter now rests.

In all the deliberations on the matter the War Industries Board has seemed to center all its thought on the motor car factories and to have left out of consideration the great merchandising end represented by perhaps 30,000 dealers and distributers all over the country.

The board has contended that it would leave enough manufacturing of passenger cars not to cripple the industry but it is difficult to see how the manufacture of passenger cars can be cut down as much as 75 per cent and yet not cripple it.

It is feared the board's attention has focussed too much on the factory end, where there would not be much perceptible crippling, provided all slack were taken up by manufacture of munitions, etc.

In a democracy it is certainly far better for industries to become adjusted to new conditions by co-operation between the industries and the government rather than by compulsion of drastic and unprecedented government action.—Chamber of Commerce of the United States.

It should be a cardinal principle that the normal structure of business should be maintained during these abnormal times as far as possible. Therefore, consideration should be given to the possibility of allowing non-essential business a proportion of its requirements of labor and materials, so that some organizations may be retained to be developed again upon the return of peaceful conditions. —Chamber of Commerce of the United States.

Dealers Have Not Been Heard From

So far, the motor car merchandising end, as represented by any national dealers' organization, has not been heard from. It has not presented its case before the War Industries Board and no provision has been made for its representation on the special committee representing the industry.

Dealers should certainly be represented. **With a possible 75 per cent of the passenger car production cut off, the case is of sufficient importance for dealers to see that such restriction must only be made when the conditions really demand it in order to win the war.**

It is time the motor car industry wakened to the fact that it is the third industry in the country in point of view of manufacture and that it has a right to be classed along with railroads, trolley lines and steamboats, as an essential in national transportation.

Today Washington looks upon the passenger car industry as a non-essential and a luxury.

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Before a business is classified as non-essential and deprived by act of government of labor and material, the industry, through duly elected representatives, should be given an opportunity to discuss the matter; to learn the premises of the government and the reasons for action. —Chamber of Commerce of the United States.

Washington insisted on the 3 per cent war tax on passenger cars at the source of manufacture, but that same Washington did not levy a tax on pianos but considered pianos an essential and not a luxury.

The piano makers went before the tax committee and told them that the piano was an educational necessity in America. They told the committee that the piano is as essential to education as the school. Washington believed them and took off the tax.

That same Washington said that the passenger car is a luxury and a non-essential and our industry was not able to convince Washington otherwise. **Washington licked us, called us a luxury, a non-essential, and sent us back home.**

As an industry we were to blame. The case was not so well handled as it should have been. That is another question that is out of place here, but the fact remains that we are classed in Washington as a non-essential and as such there is no telling where the axe will fall next and what will be the consequence.

Look at Priority Order No. 2 issued last week with regard to open-top freight cars. It rules that passenger motor cars, furniture, pianos, material for building moving picture theatres and materials for roads shall not be carried in such cars. This shows where Washington classes us along with materials for moving picture theatres.

Have YOU the Wrong View?

Many in the motor car industry may be sold to themselves that we are a luxury industry, an industry of non-essentials, and as such are ready to accept any reduction without protest. Some may think it will not be patriotic for them to try to get steel for motor cars if there is a shortage.

Howard Coffin, once Hudson engineer and still vice-president of that company, but who for two years has been living in Washington at his own expense and giving his service free to the country, and who is chairman of the Aircraft Production Board and a member of the advisory commission of the Council of National Defense, is of a different opinion.

His patriotism is founded on honest service to the nation—that service which does most good in these war days, and not that blind submission which might lead to weakening us as a fighting nation rather than strengthening us.

When presenting the arguments of the passenger car and accessory industry before the War Industries Board yesterday he used the excellent phrase, **"this is the beginning of a great economic mistake."**

He referred to the great mistake of curtailing and restricting industries in war time, when the strength of a nation depends on the strength of its industries.

We cannot lick the Hun with an array of weak industries.

We cannot continue to buy Liberty Bonds of a new issue each six months while the war lasts, with weakened industries that have livers white as milk.

Coffin sees the national danger of cutting down industries that Washington has officially declared as luxuries and non-essentials, but which economically it has not yet been settled are luxuries or non-essentials.

Coffin takes the stand, **and the industry is back of him in it,** that we are not unpatriotic in resenting such a curtailment of passenger car production when it is honestly not known whether it is really necessary or not.

Washington Is in the Dark

Official Washington does not know whether the shortage of alloy steel and whether the economic necessity of the industry warrant such action.

This is why Coffin declared to the War Industries Board that he would not permit anyone to challenge his patriotism in the stand taken against the Board's rulings.

Coffin and the industry want the facts. No person has a better right to use those excellent words, "We permit no challenge of our patriotism," than Howard Coffin. Here is the reason:

Two years ago Coffin set out at his own expense to build up an industrial inventory of the factories of America. He conducted an investigation covering nearly 30,000 factories. The work was intended to find out what factories would be available for munition manufacture in case of war, and what ones would have suitable machinery, **and that was a year before war had been declared.**

He knew the motor car industry would have to bear its share and knows that today, but the shipment of alloy steel has not been stopped because of munitions in particular.

Read What Coffin Believes

Coffin knows that the motor car industry will use all its slack and a good deal more in war manufacture, but he is not convinced that there is any necessity for such a wholesale cutting off of production as is suggested, nor is he convinced that the motor car is a non-essential or a luxury.

He knows that a part of the industry is a non-essential and that a part of the passenger cars are luxuries, but that the luxury and non-essential part has already been

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taken care of automatically and is represented in the 50 per cent slack in city car sales that has been general over the country for some time.

It is certainly high time that every one connected with the merchandising branch of the motor car industry settle with himself the argument as to whether his business is a luxury and a non-essential; and he also should settle with himself whether it would not be the beginning of a great economic mistake to clip off an industry as the War Industries Board threatens to clip it off.

What Two Prominent Factory Men Think

Cars Are an Essential Product

R. H. Collins, president and general manager of the Cadillac Motor Car Co., says:

"There is nothing that is in my opinion threatening the standing of the motor car dealer to-day. There is nothing as yet that should cause a good dealer any alarm. Each one should of course admit that times are strenuous and look after his overhead, but he should go right along as though nothing had happened because thus far nothing has happened.

"It is the opinion of some of the biggest men in the motor car industry that by next spring we will see the highest prices paid for new and used cars because of the great demand.

"Each dealer should have his business well in hand and operate sensibly. If he gets his business in a flexible condition he should make as much money this coming year as he made during the past year. Outputs of factories undoubtedly will be guided by the demands of the government, but there should be cars produced that will meet the demands of dealers in their various localities. I believe this production can be effected and still not interfere with the needs of the government.

"Cars are an essential product, not a non-essential, and nothing would more quickly cripple the country than to deprive men of the privileges of buying motor cars.

"It would decrease our farm outputs and everything else and what would become of our government loans?

"The recent meeting of the manufacturers and the War Industries Board in Washington resulted in the planning of a motor car committee. I believe this step will result in this industry being permitted to work out a co-operative plan, and I believe this plan will result in a reasonable production of cars along with full co-operation in the government's war work.

"I am neither a pessimist nor an optimist in this situation. I am just trying to exercise plain common sense."

80% Use Their Cars for Business

Walter F. Flanders, president of the Maxwell Motor Company, says:

"Dealers should have confidence at this time and not be unduly alarmed. So far as Maxwell dealers are concerned, they are going to find a big opportunity in our 1-ton truck and I do not think the government is going to cut unduly into the output of a car that is such a necessity as the low-priced car.

"We made a canvass of 200,000 Maxwell owners and found that *about* 80 *per cent of them are using their cars for both business and other service.* We have corporation buyers using cars in their business in large quantities. General Electric is using a fleet. The city of Kansas City is using 30 and there are many others. In addition to new cars, there are used cars which dealers can overhaul and sell.

"Taking everything into consideration, there is nothing to justify undue alarm or a panic among dealers.

"If we are cut off on certain steels, we may have to use other steels, but we have now in stock enough to run for some time. We must all bear in mind that our big job at present is to help the government run the war.

"And we get all sorts of government demands daily, mostly for skilled men and we gladly send them, but I believe we shall be able to help the government and still keep a good part of our production."

Will not official Washington recognize that "..... the luxuries of one age are the necessities of the next"?

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Dealers Subscribed For Over $100,000,000 of Second Liberty Loan

HOW important is the merchandising branch of the motor car industry to the financing of the United States in the war with Germany? The answer may be found in the brief statement that more than one hundred million dollars was subscribed, or raised, by this branch of the industry to the Second Liberty Loan.

No more certain proof of the essential character of the great dealer industry of the country could be imagined. Yet this is the industry that Washington aims a death blow at when it proposes to cut down passenger car production anywhere from 40 to 75 per cent on the ground that there is a shortage of steel and that the passenger car is a luxury and a non-essential.

In order to demonstrate the importance of the dealer industry and the urgent need of conserving a business which has been built up through years of hard work until it has become one of first importance, Motor World telegraphed every organization of dealers and garagemen in the country.

At the moment of going to press we have already received replies from 33 dealer associations, and the total amount of Liberty Bond subscriptions as given by these telegrams is $38,554,750.

The important message carried by these telegrams is that if by government action passenger car production is cut down from 40 to 75 per cent, as is at present proposed, the dealers of the country will be unable to lend their support to the third Liberty Loan to the extent of more than one hundred million dollars—or to the fourth, or the fifth, or the sixth or seventh.

In other words, the government will cut itself off from the possibility of any help from motor car dealers, garagemen and repairmen. Furthermore, motor car factories, which heretofore have been liberal purchasers of Liberty Bonds will be unable to purchase any more in the future, for the success of the factory—its ability to accumulate funds with which to make Liberty Bonds investments—is dependent entirely upon the number of cars its dealers sell.

Just how destructive the proposed cut in passenger car production would prove is in part made plain by the following telegrams, which are only a few from the great number which Motor World has received:

"We operate eleven exclusive Ford retail stores in Connecticut and the reduction of 50 per cent in our allotment would necessitate closing of our stores."

"Fifty per cent reduction in manufacture of automobiles would seriously affect forty dealers in this city."

"State of Oklahoma alone is using approximately 60,000 new automobiles a year and the war tax on these new cars would amount to over one million dollars."

"Threatened reduction in automobile production would irreparably injure the great industry and mean ruin for some of our dealers."

What a Fraction of the Dealer Industry Has Subscribed for the Second Liberty Loan

Akron, Ohio	$6,000,000
Albany, N. Y.	175,000
Birmingham, Ala.	37,500
Bloomington, Ill.	25,000
Boston	2,497,000
Chicago	969,350
Clinton, Iowa	9,000
Colorado Springs, Col.	27,800
Davenport, Iowa	250,000
Denver	70,000
Des Moines, Iowa	150,000
Fargo, N. D.	3,500,000
Fort Worth, Tex.	2,000,000
Grand Rapids, Mich.	25,000
Hartford, Conn.	120,000
Indianapolis	750,000
Kansas City	150,000
Los Angeles	500,000
Memphis, Tenn.	121,100
Milwaukee, Wis.	350,000
Minneapolis	400,000
New Haven, Conn.	500,000
New York	12,705,000
Newark, N. J.	250,000
Oklahoma City, Okla.	250,000
Philadelphia	1,000,000
Rochester, N. Y.	400,000
Rockford, Ill.	20,000
San Francisco	3,500,000
Stockton, Cal.	150,000
Toledo, Ohio	1,500,000
Utica, N. Y.	103,000
Worcester, Mass.	50,000
Total (less than one-third the industry)	$38,554,750

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Is This Industry Non-Essential?

Could We Do Without Telephones and Railroads? Motor Cars Are as Essential as These

ARE you sold on the fact that the passenger motor car is an essential to present-day life?

If you do not believe this yourself, then you cannot expect other people to believe anything you might say to that effect.

The belief starts with yourself. You must first believe and after that your own words will carry conviction.

Motor World believes that the passenger car is an essential and that it is not a luxury. A percentage of motor cars sold can only be classed as luxuries. A percentage of cars sold must be classed as non-essentials in that they do not get into the essential channels of life. We do not dispute that statement. We believe it.

But the majority of the passenger cars sold represent essentials and not luxuries. The farmer buys the major percentage of our passenger cars and while some farmer-bought cars are luxuries the great majority fill a utilitarian service that cannot be questioned. The farmer needs the car to-day. Many farmers have not studied the national economics of the car to the extent which shows them the actual rôle it plays. The farmer did not figure out how much improved roads would save him per year, but when he got the improved roads he soon discovered how much his property increased in value.

Ask the Farmer This Question

Ask the farmer if he can do without the rural telephone, the rural mail delivery and the passenger motor car. All of them are economizers of his time. All of them make it possible for him to accomplish more in a given week, or month, or year. All of them give him a wider view of the world, a wider knowledge of markets, a wider knowledge of affairs, make him a better American citizen and make him a greater producer.

There are exceptions to every rule and there are farmers who have cars and who cannot afford to own them. There are farmers who are using motor cars more than they are warranted in using them. There are farmers who are not giving as much attention to their farms as they should because they own cars.

Many say that the passenger motor car is not an essential in war because its use has practically ceased in Europe and every motor car sales organization has gone out of business or has been used to make ammunition. From this they argue that the car is not essential in America. For several reasons we do not agree with them. Here are some of these reasons:

1—The situation in England is not a parallel with that in America. In England the use of the passenger car has been restricted largely because of the scarcity of gasoline. That scarcity of gasoline does not exist in America and there is not any possibility of it coming, according to the latest reports of the gasoline makers and those producing crude oil from which the gasoline is made.

2—The passenger motor car never filled the field in England that it does in America. The motorist in England was not the farmer, but the well-to-do. In America the masses represent the great utilitarian field of motor car use. Such a class never existed in England.

3—The motor car industry never was a great industry in England in the sense that it is in America. Here it is the third manufacturing industry, but in England it never became one of the major industries.

4—In America the motor car industry was a leading industry in the nation as a production industry. In no other country in the world did the motor car industry rank as high as it did in America. Europe was never able to produce machines in quantities such as America has. Europe had no machines to compete with ours in price. England never got production onto a quantity basis.

5—No matter what corner of the world the American motor car has been exported the selling field of the passenger car has immediately broadened in those lands. Previous to American cars reaching those lands, European cars sold to the wealthy classes. The masses had no thought of ever owning such a vehicle. The exporting of the low-priced American car changed this. The masses saw the possibility of owning a car. They purchased.

6—America has made the motor car for the masses rather than for the classes. The American car is an uplifter of masses which is unique to our industry. In these war days all uplifting of the masses is a most necessary, in fact imperative, movement. As such our industry takes the place of an essential in these days of higher efficiency. The recreation that the motor car affords is an essential to-day. In London or Paris the theatres are busier than they ever were in peace times.

This War Is to Increase Efficiency

7—This war is in the final analysis being waged to increase the efficiency not only of the individual, but of the nations of the entire world. The more efficient will win out over the less efficient.

Who would consider it good efficiency to give up the telephone, yet what is it but a means of accomplishing a certain job in a shorter time.

Who would be willing to give up the telegraph, yet it is nothing but an economizer of time.

Who would think of living in a land without railroad lines and passenger and freight trains, yet they are both great economizers.

Man is able to accomplish more from the rising of the sun to the setting because of these many agents that administer to him, that do his bidding, that make him do more in the hour and that sharpen his brain and increase his working capacity.

Settle with yourself the great question of the passenger motor car being an essential to efficient American life.

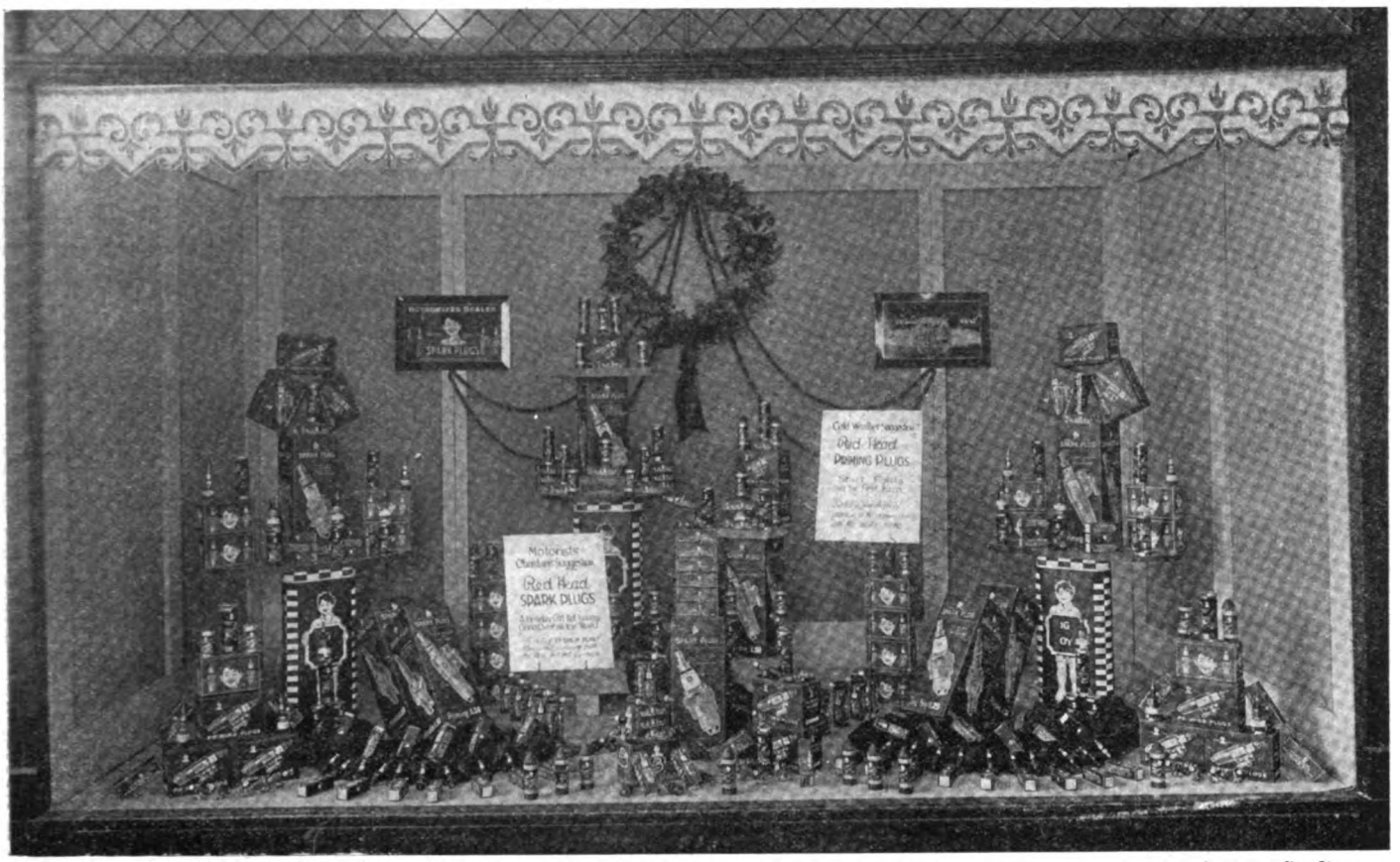
When you have done this then talk it.

Winning this war demands that every agent of efficiency be used—that they be used to keep the individual and the nation healthy. We can never lick Germany with a mentally and physically weakened people.

Our final knockout blow in this war will depend on healthy industries and healthy people.

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Motor World Window Service



Motor World Window Service *Fashion Camera Studios*

How to Trim This Window

The Red Head Spark Plug display here featured for a Christmas window is set up with cartons as pedestals supplied by the Emil Grossman Mfg. Corp., Brooklyn, N. Y. They are 24 inches high, one on each side, with a shelf 24 inches long on top—velour puffed from bottom of each. This is separated on a small platform with velour puffed in front in centre of window, using 18-inch round shelf, on top of which is placed a spark plug box. Two signs placed on stands, one at height from floor to top 24 inches—the one on the right 42 inches. The wreath is hung flat against the background with chenille draped to two signs. Red ribbon bow is attached to bottom of wreath. Show cards are 12x16.

The letters below are to be mailed out the Saturday of the week before this display is set up. Use any one of them, or use one the week before and the others at intervals of 5 or 7 days.

Use These 3 Letters

Priming Plug Letter No. 1

Your car starts hard these cold days, doesn't it?

And do you know that it isn't necessary to tire your arm, strain your back and waste your time? And neither is it necessary to go to the expense of putting on a starter.

Here is how you get easy starting:

1—Equip your car with Red Head priming plugs.

2—Squirt a few drops of gasoline into the priming cup.

3—Turn the crank and away she goes.

That's a lot easier than winding away on the crank and is much cheaper than putting on a starter.

If you ever use a priming plug you'll never be without it, not even in summer.

The price? Oh, that's $1.50 each, which is a pretty low-priced cold-weather starter, isn't it?

If you will drive to our door we'll put in a set in about ten minutes.

Priming Plug Letter No. 2

You probably have wished for a starter on your car.

It starts hard these cold days, and you have figured that a starter would relieve you of this hard cranking.

And if starters sold for about $6 you would have one in a minute.

You don't need a starter to get easy starting. What you need is a set of Red Head priming plugs.

These have a little cup in the side into which you squirt a little gasoline just before cranking.

This gasoline makes gas in the cylinder head and all you have to do is turn the crank and away she goes.

They are only $1.50 each, which gives you easy starting for $6. Cheap enough, isn't it?

Drive to our door and we can equip your car and make it an easy starter in about ten minutes.

Priming Plug Letter No. 3

If you don't use your car it is a waste investment, isn't it?

And if you fail to drive it these cold days because it starts hard, this fault is an inefficiency, isn't it?

And if we can correct this condition we are saving you time, money and arm-tiring labor, aren't we?

We can do it, and here's how:

Equip you car with Red Head priming plugs.

When you want to start squirt a little gasoline into the priming cup.

Turn the crank and away she goes.

That's easy, isn't it? It makes your car of use and a comfort all winter. It ends back-straining, cranking.

And the price! Only $1.50 a plug. That gives you easy starting at much less than the cost of a starter.

Drive to our door and we can equip your car in ten minutes.

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Repair Order Smooths Shop Difficulties

Gives complete record of customer, his car and work done thereon. Eliminates forgetting and prevents misunderstanding

We are prepared to send you a sample for your inspection free, or in quantity at the following prices: 100, $6.50; 1000, $16.00; 2000, $28.75.

THIS form is made out when the customer brings in his car for any sort of mechanical work. It gives full information on:

The customer,
His car,
The work to be done,
The material used,
The labor employed,
Testing both before and after.

It may be used in connection with a tester's report or his report may be made directly on this form.

It may be used for monthly inspection service.

In a small shop it may take the place of requisition and time job cards, records of time and material being made on the back of the form only. Even though requisition and job forms are used, the record on the reverse side is necessary.

Triplicate Form

The repair order form is made out in triplicate, white, buff and manila card. The original or white copy goes to the office, the buff to the owner, and the manila card is attached to the car and goes into the shop.

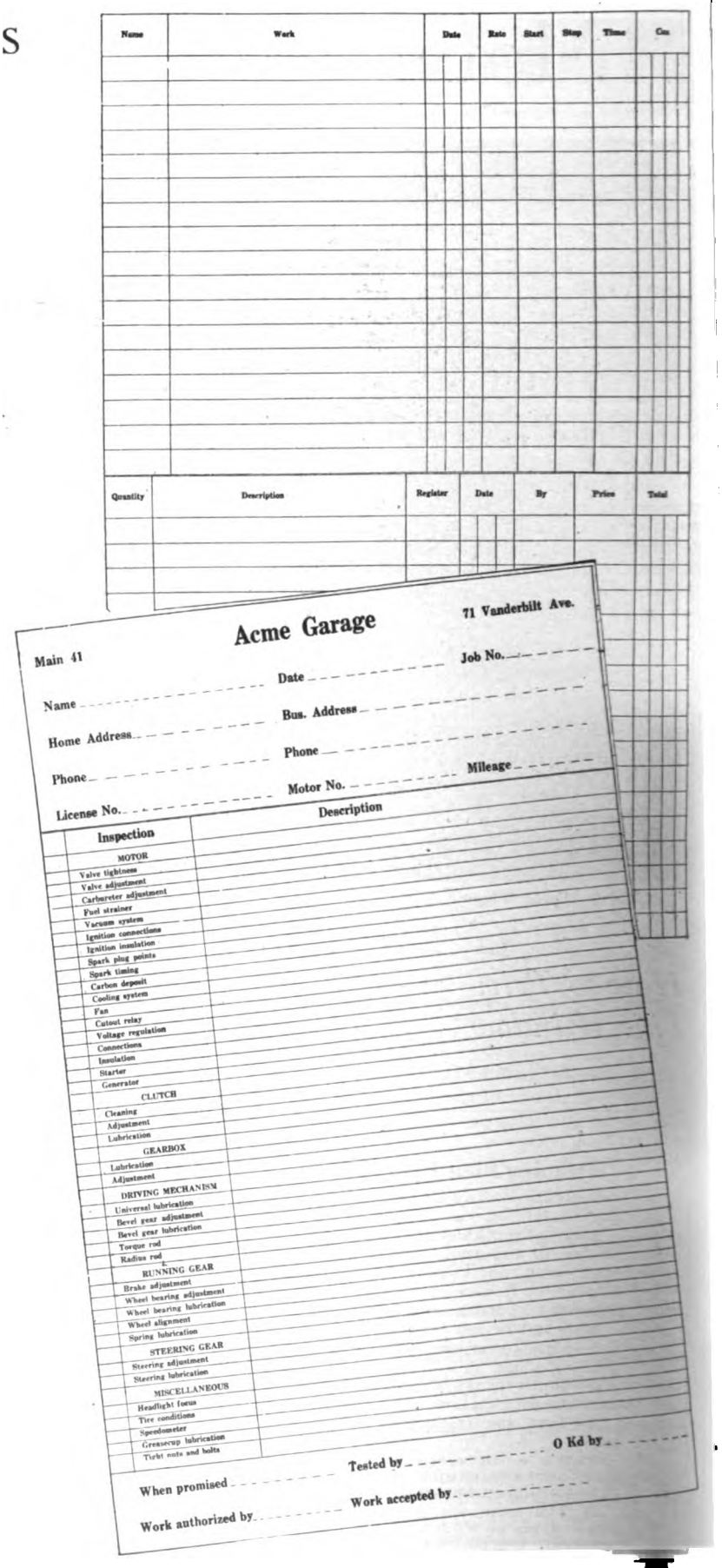
A form is made out every time a customer requires work done on his car whether the work is free inspection service or paid service.

The name of the customer, his home address and phone number are written in. This information is necessary in order that he may be reached without loss of time.

The date and the number of the job are put down; the job number is a simple means of identifying that particular job. All the jobs which come into the shop after installing this system should be numbered from 1 up consecutively.

The engine or car number, the license number and the speedometer reading should also be noted.

The license number affords a ready means of identification when the car is in the shop or at any other time, and it is particularly advantageous in a large shop. Furthermore, if the customer is a stranger and should take his car out without paying his bill it would be possible to trace him through the Secretary of State.



This form in triplicate gives full information regarding car and owner on the front. Free or paid inspection service is provided for at the left and description of work to be done at right. There is ample space on the back for a full time and materials record. The size is 6 x 9

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If the customer is a transient his address may then be obtained from the Secretary of State in case he only gives his name—or possibly not even that, if the job is a small one—so that he can be reached with sales letters to induce him to come again.

Engine Number Is Necessary

The engine number is a necessity as an absolute means of identification in case the car is sold and the license number is changed, or in case the numbers are damaged or prove defective.

The speedometer mileage should be recorded so that any mistakes by the owner regarding the mileage of the car may be verified. For example, suppose that some repair work was done and the car gave trouble after running 200 miles, according to the owner's statement. If the speedometer showed 1000 miles this would naturally put a different complexion on the matter.

There is a column at the left of the card for service inspection work. This list should be helpful in not only performing free inspection service in connection with new cars, but also for regular inspection work, which many owners now have done.

Very full directions regarding the work to be done on the car should be written in, and at the bottom the date when the work is promised should be inserted.

The signature of the owner authorizing the work should be obtained in every case so that there can be no dispute as to what was ordered when the time comes to pay the bill. If after this work has come in, it is found that there are additional things to be done, the owner may be called on the telephone and the permission obtained; but, in addition, it is wise to have his consent in writing, and consequently these additional items should be placed on the work card and mailed to him for his signature.

After the job is completed it should be tested by someone, usually the foreman, and when the car is delivered the owner should signify that everything has been done to his satisfaction by signing at the bottom of the form. The signatures on the bottom of the card should appear on the office copy.

The reverse side of the form which is filled out may be the copy kept in the office as a matter of record or the copy which goes on the car in the shop; or it might be wise to have this information on both copies, according to circumstances.

If the shop is a small one the complete record of time and material may be kept on the back of the manila copy attached to the car. This should be done by the foreman, superintendent, or, in a very small shop, by the owner himself. For example, when "Bill' starts grinding the valves the foreman would get this card, writing down the dates, "Bill's" rate (60 cents), the starting time (9:30) and, later, the finishing time (2:30), the total time (4 hours), and the cost ($2.40).

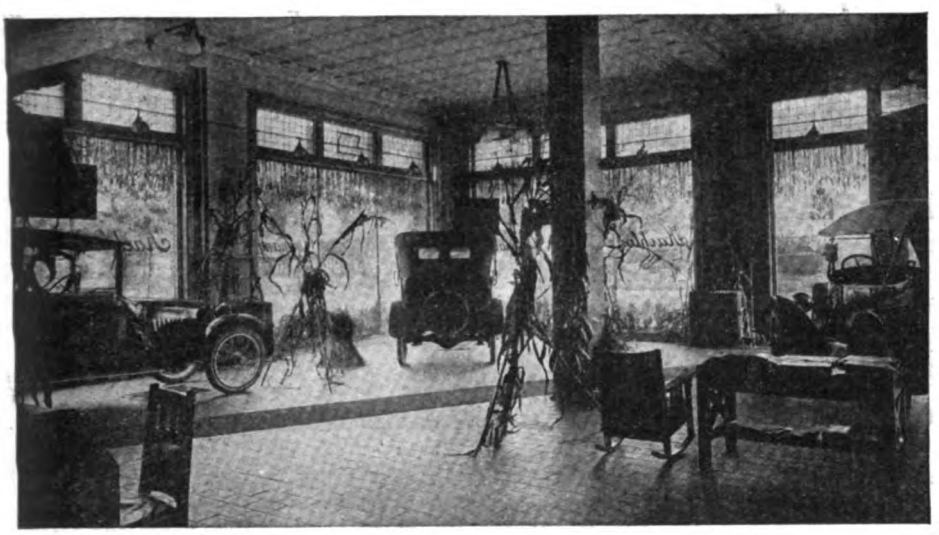
Likewise, when "Jack" wants twelve new piston rings he goes to the stockroom and gets them, and the foreman records the fact on the card.

Keeping the Record

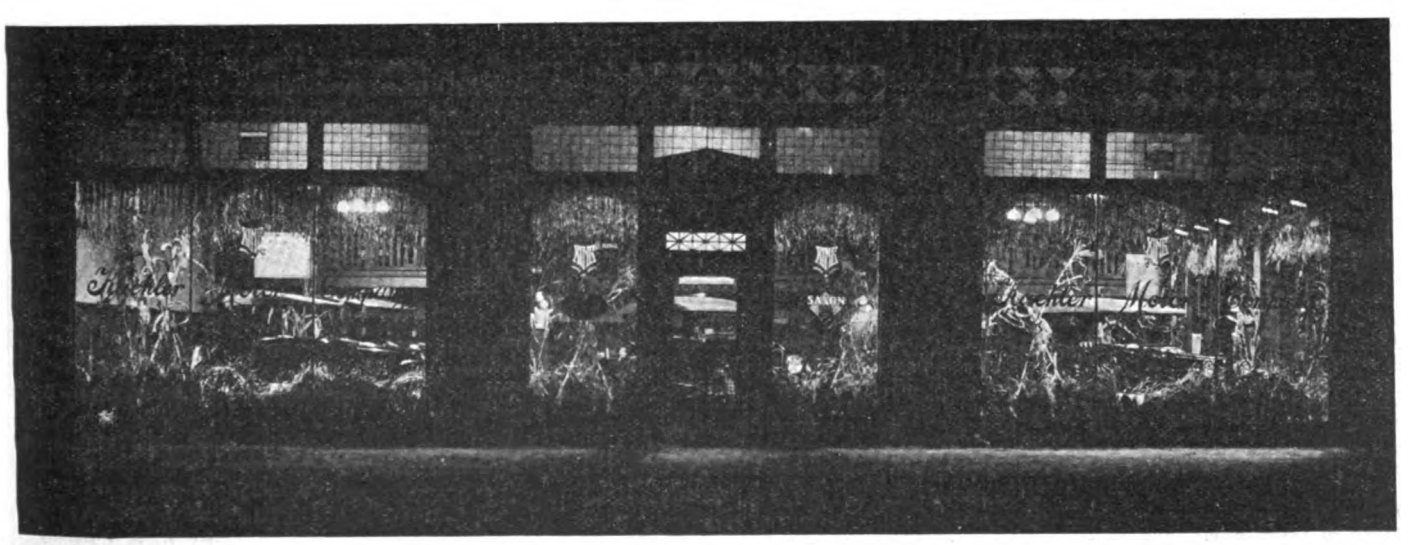
Inasmuch as this copy is subject to frequent handling and is likely to become dirty, it is advisable to make these entries on the office copy instead. In a small shop this copy might be kept on a desk in the shop.

In a larger shop the full record would be kept on the office copy and would be done by a clerk.

How to Make a Harvest Window Display



THE harvest season always has a peculiar sentiment attached to it—and the Kaehler Motor Co., Richmond, Va., has taken advantage of it. It is quite simple, too. Probably it required only that some live wire in the organization get a neighboring farmer to donate a couple of dozen or so cornstalks. This with the arrangement of other harvest "properties," if they may be so termed, completed the display. At night the salesroom was brilliantly illuminated and attracted a lot of attention.



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Winter Business

Come on, Jobbers— Start the Good Work!

How One Jobber Is Boosting Winter Business



CUMINGS BROS., Flint, Mich., sent to the dealers in that territory a Winter Business letter. With it went an 18 by 23 Winter Business folder, printed on both sides, showing an array of goods that can be sold during the coming months.

This is real constructive work. It helps the dealer make money. It suggests to him goods he might not have thought of himself. And incidentally it boosts the Winter Business of the jobber. It helps take the slump out of "that curve."

The folder is shown in part above. The letter is also printed. The Cumings idea is good. And now—we want to show in Motor World what every other jobber is doing to boost Winter Business. Everybody, send along your ideas.

To Cumings Dealers

BOOST WINTER BUSINESS!

DON'T HIBERNATE! WORK HARDER! Sell your customers seasonable goods that will give them comforts of summer and keep the cars moving.

We will mail you in a very few days our special fall and winter bulletin listing a line of seasonable goods which will boost your winter business and keep it up to a normal point. Keep your eyes open for it.

We have spent a great deal of time in selecting and considering the selling possibilities of these goods, and absolutely know that if you will stock and push them that you will do a very satisfactory winter business.

It is up to dealers and jobbers to co-operate and all pull together for a greater volume of winter business. Pass the slogan along to your competitors—"Boost winter business." Talk it strong and make it your creed. Discourage every man who has the slightest intention of laying up his car.

Use this argument on him: "Why shouldn't you get around in winter with just as much ease, comfort and speed as in summer? You need a car in your business. Why should you suddenly cut off that incomparable pleasure which only a car offers just because there is a little snow on the ground? Think how much more comfortable it is riding in a closed automobile than in a cutter or sleigh. We have good roads which will permit driving all winter. I can equip your car with appliances to keep out the cold and give you comforts of summer."

You can make a nice bunch of money equipping cars in your territory, and it goes without saying that if you can keep the cars running in your territory, your regular repair, gasoline and oil business will continue

We have no financial interest whatever in the Motor World magazine, but earnestly request that you read without fail the special winter business number, out on October 10. The attached sheet describes the fourteen business-building plans which this issue will contain. Get a copy of this number for YOUR benefit.

We wish you the most successful winter business you have ever done, and remain,

Yours for co-operation,
CUMINGS BROTHERS,
By E. S. Cumings.

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Christmas Cards

Are you getting busy with your Christmas cards? You should begin NOW to consider this matter. In case you have no source of supply ask Motor World for prices on the cards that were shown on pages 12 and 13 of the Winter Business Number, Oct. 10.

Fill Your Garage NOW for the Winter

Editor Motor World: On page 24 of your Winter Business Number under "How to Keep Your Garage Full" you refer to "garage letters Nos. 1, 2 and 3 on page 46," but I can find no such letters on page 46. If you have these letters will you please send them to me, as I am completing a big new garage and I want to make a drive for storage, etc.

I am using your letters and forms on other subjects and find them a great help to me. Thanking you in advance for anything you can do for me, I remain yours truly, Fox-Buick Sales Co., F. E. Fox, Proprietor, Cuyahoga Falls, Ohio.

(We don't wonder that Fox can't find the letters. We can't find them ourselves, so here they are.—Ed.)

These letter should be sent to a list of car owners whose cars are above the lowest price class. The man who pays $1,500 for his car thinks more of it than does the $500 or $600 owner. The letters should be mailed a week or ten days apart and should be followed by personal calls on selected prospects in case the garage doesn't fill up fast enough.

1

Cold days are here—or not far away.

And the cold may damage your car if you don't take care of it.

It is quite a bit of trouble for you to take care of your car, because it is just one thing more to watch and keep an eye on.

May we make a suggestion? It is this:

We have a garage that is an ideal home for your car. It is modern in every way. It is warm—no danger of freezing.

We can care for your battery, your tires and your motor.

In case you are not going to use the car during the cold months we suggest that you investigate some of the dead storage spaces we have open, and if you're going to drive throughout the winter in the crisp, keen air, we suggest that you make our service increase your pleasure.

Call and inspect our new building.

2

If your car motor should freeze some night it might cost you a lot of money, might it not?

And if the cold got into your batteries that would be another loss, wouldn't it?

And if your tires were damaged by extreme cold and improper care you would be out more money, wouldn't you?

There is nothing like a warm up-to-date garage to keep a car fit.

We have a garage that can give your car the best of winter care. We believe you will find our winter service a good investment.

If you are not going to drive all winter a good plan is to let us fix the car up in a warm corner and protect it until spring. But if you're going to drive, that is all the more reason why you should let our service increase your pleasure.

Call and inspect our new building.

3

Good care for your car this winter may mean a lot to you by next spring.

There are many things that may happen to a car during the cold months, no matter whether you drive it or not.

The sure way of giving your car safe shelter and good care is to place it in an up-to-date garage where there are men on duty day and night to keep the temperature right, to see that it is protected, to care for the battery and to maintain the best of conditions.

There is no use enumerating all the troubles that cold weather can bring.

Suffice it to say that our garage can give your car the best of care.

Dead storage rates are very low, and live storage rates are not much higher. But the big point is that YOU get satisfaction.

Call and inspect our new building.

Go After Some Top Overhaul Business

Editor Motor World: Will you please publish a letter in the Motor World telling How to Get Automobile Top Prospects, or a form letter to send to automobile owners—a letter with pep behind it. Thanking you in advance, we remain—Comfort Cushion Co., Morris A. Appel, Manager, 1629 Germantown Avenue, Philadelphia.

Letters of the kind mentioned should be sent to owners of cars whom you know to be in need of new tops. For example, one car may need retopping in one year, others in two years. Your experience will guide you in making up such a list. Buy such a list from a list company if you have no list. Of course, before starting such a campaign any dealer should KNOW he is equipped to give service and should make it a point to turn out A-1 work. The letters asked for by Appel follow:

1

When your derby hat has done one season you begin to consider replacing it with a new one, don't you? Some of us get the old hat overhauled, but there are few hats that can go through more than one season without replacement or at least attention. What your hat is to you the top is to your car.

A top will generally go more than one season, but it isn't long before little things develop that require attention.

Perhaps you would find a new covering worth while. It certainly would make the whole car look like new.

And in any event there may be broken fasteners, cracked windows in the curtains and worn spots in the cloth.

We suggest that you let us give you an estimate on putting your top into tip-top condition. Ask us for an estimate.

2

When discolored spots appear inside an automobile top it is a sign that the top needs attention.

1—The top may be developing rotted spots, caused by hard service and much rain.

2—The spots may merely be discolorations due to excessive rain, but not long service.

If the top is showing real wear it should be repaired. It should have a new covering or should be patched. If not, it will go to pieces rapidly.

If the fabric is still in good condition the discolorations can be removed and the outside made to look like new by the application of our special top treatment.

An entire new covering costs little and a retouching less yet. We suggest you drive to our door and ask for an estimate.

3

A new top adds a lot to the looks of a car, just the same as a new hat adds to the looks of a man.

Perhaps your top needs an entire new covering, and maybe all it needs is retouching to preserve the fabric and take out any discolorations that have appeared on the inside.

Putting a top into good condition is not an expensive job, and is well worth what it costs. It adds to the value of the car.

Not only does it give looks, but it gives better service.

Cracked curtain windows, loose or broken fasteners and all sorts of little top troubles should be given attention before they become big troubles. A little repairing now may save a big bill later.

We suggest that you drive up to our door and ask us for our estimate.

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Passenger Cars

MOTOR WORLD GUIDE

Passenger Cars

This table appears in the first issue every month. It is corrected every month and brought up to date.

MAKE AND MODEL	Price	No. of Cylinders	Bore and Stroke, Inches	S.A.E. H.P.	Piston Displacement Cubic Inches	High Gear Ratio	Make of Engine	Cylinder Shape	Camshaft Drive	Water Circulation	LUBRICATION System	LUBRICATION Type of Pump	ELECTRIC SYSTEM Make	ELECTRIC SYSTEM Voltage	IGNITION Make	IGNITION Plug	CARBURETION Make of Carbureter	CARBURETION Fuel Feed	Clutch Type	TRANSMISSION GEARSET Location	TRANSMISSION GEARSET Forward Speeds	TRANSMISSION GEARSET Make	TRANSMISSION Final Drive	TRANSMISSION Car Drives Through	TRANSMISSION Rear Axle Type	TRANSMISSION Make of Rear Axle	TRANSMISSION Torque Taken By	RUNNING GEAR Wheelbase	RUNNING GEAR Tires	RUNNING GEAR Rims	RUNNING GEAR Wheels	RUNNING GEAR Rear Springs	Make of Speedometer	BEARINGS Number Crankshaft Bearings	BEARINGS Gearset	BEARINGS Rear Axle	BEARINGS Front Wheel
Abbott 6-44	$1295	6	3½x4½	25.3	224.0	4.75	Cont	L.	H	P.	Sp-Pr	P.	Remy-1	6	Remy	⅞	Stmbg	V.	P.	Unit M.	3			Sp.B.	Springs.	¾ F.	Salsbry.	Springs.	122	32x4	SS	Wd.	S-E	Stewart.	3	B.	R.	R.
Abbott 6-60	1595	6	3½x5½	29.4	303.1	4.03-1	Cont	L.	H	G	Sp-Pr	C.	Remy	6	Remy	⅞	Stmbg	V.	P.	Unit M.	3			Sp.B.	Springs.	¾ F.	Salsbry.	Springs.	122	34x4	SS	Wd.	S-E	Stewart.	3	R.	R.	R.
Allen 41	1095	4	3½x5	22.5	220.9	4.45-1	Own	L.	H	T.	Cir-Sp	P.	A-Lite-2	6	Conn	⅞	Stmbg	V.	P.	Unit M.	3	Own		Sp.B.	Springs.	F.	Adams.	Tor.T	112	32x3½	SS	Wd.	S-E	Stewart.	3	R.	R.	R.
American A	1375	6	3½x5	23.4	230.1	4.42-1	Amco	L.	H	P.	Cir-Sp	P.	G&D-2	6	G&D	⅞	Zenith	V.	P.	Unit M.	3	Mech		Sp.B.	Springs.	¾ F.	Salsbry.	Springs.	122	32x4	SS	Wd.	S-E	Stewart.	2	BP.	B.	B.
Anderson 6-40	1435	6	3½x4½	25.3	224.0	4.42-1	Cont	L.	H	P.	Sp-Pr	P.	West-2	6	Conn	⅞	Zenith	G.	P.	Unit M.	3	Detroit	Bevel	Springs.	S-F	Hess	Springs.	120	33x4		Wd.	S-E	Stewart.	3	R.	B.	B.
Apperson 6-18	2200	6	3½x5	29.4	288.6	4.25-1	Own	L.	H	P.	Pr		G Bijur-2	6	Remy	⅞	Rayfield	V.	P.	Amid	3	Own		Sp.B.	Springs.	F.	Own	Springs.	130	34x4	SS	Wd.	¾ Ell	VanS	3	BP.	BR.	B.
Apperson 8-18	2550	8	3½x5	33.8	331.8	4.64-1	Own	L.	H	T.	Pr		G Bijur-2	6	Remy	⅞	Johnson	V.	P.	Amid	3	Own		Sp.B.	Springs.	F.	Own	Springs.	130	34x4	SS	Wd.	¾ Ell	VanS	4	R.	R.	R.
Auburn 6-39	1195	6	3½x5	23.4	230.1	4.42-1	Teetor	L.	H	P.	Cir-Sp	P.	Remy-2	6	Remy	⅞	Rayfield	V.	P.	Unit M.	3	Own		Sp.B.	Springs.	F.	Own	Springs.	130	35x4½	SS	Wd.	Ell	VanS	3	R.	R.	R.
Auburn 6-44	1635	6	3½x5½	29.4	303.1	4.00-1	Cont	L.	H	P.	Cir-Sp	P.	Delco-1	6	Delco	⅞	Rayfield	V.	P.	Unit M.	3			Sp.B.	Springs.	¾ F.	Clumba	Tor.A	120	34x4	SS	Wd.	S-E	Stewart.	3	R.	R.	R.
Austin 3750		12	2½x5	39.7	389.5	3.75-1	Widly	L.	H	P.	Pr		G. Delco-2	6	Delco	⅞	Stmbg	V.	D.	Unit M.	6	Muncie		Sp.B.	Springs.	F.	Clumba	Tor.A	131	35x4½	SS	Wd.	Cant	Stewart.	3	BP.	R.	B.
Bell 17	895	4	3½x5	19.6	192.4	4.25-1	Lycmg	L.	H	T.	Cir-Sp	P.	Dynto-2	6	A.Kent	⅞	Zenith	V.	D.	Unit M.	3	Covert	Bevel	Springs.	¾ F.	Adams.	Springs.	112	31x4		Wd.	¾ Ell	Stewart.	2	R.	R.	B.
Ben Hur 1875		6	3½x5½	29.4	303.1	4.45	Buda	L.	H	P.	Spl-Pr		West-2		Bosch	⅞		V.	P.	Unit M.	3		Sp.B.		F.	Timken		126	35x4½		Wd.	S-E		4	B.	R.	B.
Biddle D 2275		4	3½x5½	22.5	226.4	4.00-1	Buda	L.	H	T	Cir-Sp	G.	G&D-2	6	Dixie	⅞	Zenith	V.	P.	Unit M.	4		Bevel	Springs.	¾ F.	Special	Springs.	122	32x4	QD	Wr.	¾ Ell	Warner.	3	BP.	BR.	B.
Bour-Davis 1385		6	3½x4½	25.3	224.0	4.42-1	Cont	L.	S	P.	Sp-Pr	P.	G&D	6	Remy	⅞	Stmbg	V.	P.	Unit M.	3	Detroit	Sp.B.	Springs.	¾ F.	Salsbry.	Springs.	118	32x4	QD	Opt.	S-E	Warner.	3	BP.	BR.	B.
Bour-Davis 1785		6	3½x5½	29.4	303.0	5.00-1	Cont	L.	S	P.	Sp-Pr	P.	West	6	Remy	⅞	Stmbg	V.	P.	Unit M.	3	Detroit	Sp.B.	Springs.	¾ F.	Spring	¾ F.	Salsbry.	Springs.	118	33x4½	QD	Opt.	S-E	Warner.	3	BP.	BR.	B.
Brewster Chassis 5500		4	4 x5½	25.3	276.5	4.50-1	Own	L.	C.	P.	Pr		G. U.SL.	12	Bosch	⅞	Zenith	V.	C.	Unit T	3	Own	Sp.B.	Sp.B.	Springs.	F.	Own	Tor.T	125	34x4½	SS	Wd.	Cant.	Stewart.	3	Brp.	B.	R.
Briscoe B-4-24	725	4	3½x5½	16.3	163.5	4.23-1	Own	L.	H	T.	Cir-Sp	T.	A-Lite	6	Conn	⅞	Buick	G.	C.	Unit X	3	Own	Bevel	Tor.A	S-F	Own	Tor.R	104	30x3½	C	Wd.	Ell	Stewart.	2	Brp.	BR.	B.
Buick D-34, D-35 795		4	3½x4½	18.2	170.0	4.08-1	Own	I.	H	P.	Cir-Sp	P.	Delco-1	6	Delco	⅞	Marvel	V.	DD	Unit M.	3	Own	Sp.B.	Tor.T	F.	Own	Tor.T	106	31x4	C	Wd.	S-E	Stewart.	3	Brp.	BR.	B.
Buick D-44-47 1265		6	3½x4½	27.3	241.6	4.08-1	Own	I.	H	P.	Cir-Sp	G.	Delco	6	Delco	⅞	Marvel	V.	DD	Unit M.	3	Own	Bevel	Springs.	F.	Timken	Tor.T	104	30x3½	C	Wd.	Ell	Stewart.	2	Brp.	BR.	B.
Buick E-49 1495		6	3½x4½	27.3	241.6	4.25-1	Own	I.	H	P.	Sp	G.	Delco	6	Delco		Marvel	V.	DD	Unit M.	3	Own	Sp.B.	Tor.T	F.	Timken	Tor.T	115	34x4	SS	Wd.	Cant	Stewart.	3	BR.	BR.	B.
Cadillac 57 2805		8	3½x5½	31.2	314.4	4.43-1	Own	L.	C.	P.	Pr		G. Delco-1	6	Delco	⅞	Own	P.	D.	Unit M.	3	Own	Sp.B.	Sp.B.	Tor.T	F.	Timken	Tor.T	124	34x4½	SS	Wd.	Cant	Stewart.	4	B.	BR.	B.
Cameron 1250		6	3 x5	21.6	212.0	4.00-1	Amco	L.	H	P.	Sp-Pr	P.	G&D-2	6	G&D	⅞	Zenith	V.	P.	Unit X	3	Own	Sp.B.	Rad.Rd	¾ F.	Own	Tor.T	{125 132	35x5	SS	Wd.	Plat		3	R.	R.	R.
Case T-17 1190		4	3½x6	21	247.7	4.40-1	Own	L.	H	T.	Pr	G.	A-Lite-2	6	Conn	⅞	Rayfield	G.	C.	Unit M.	3	Own	Sp.B.	Tor.T	F.	Salsbry.	Tor.T	122	32x4		Wr.	Cant		3	B.	B.	B.
Case U 1875		6	3½x5½	29.4	303.1	4.55-1	Cont	L.	H	P.	Sp-Pr	G.	West	6	West	⅞	Rayfield	V.	D.	Unit M.	3	G-Lees	Sp.B.	Springs.	¾ F.	Clumba	Springs.	125	35x4½		Wd.	Cant	Stewart.	3	RP.	R.	R.
Chalmers 6-30 {1365 1450		6	3½x4½	25.3	224.0	4.75-1 5.18-1	Own	L.	C.	T.	Sp-Pr	G.	West-2	6	Remy	⅞	Stmbg	V.	P.	Unit M.	3	Own	Sp.B.	Springs.	S-F	Timken	Springs.	{117 122	32x4 34x4	SS	Wd.	S-E	Stewart	3	R.	R.	R.
Chandler 17 1595		6	3½x5	29.4	288.4	4.40-1	Own	L.	C.	P.	Cir-Sp	P.	G&D-2	6	Bosch		Rayfield	V.	D.	Unit M.	3	Own	Sp.B.	Tor.T	F.	Own	Tor.T	123	34x4	SS	Wd.	S-E	Warner.	3	B.	B.	R.
Chevrolet 490 635		4	3½x4	21.7	170.9	4.67-1	Own	I.	H	P.	Sp-Pr	G.	A-Lite-2	6	Remy	⅞	Zenith	G.	C.	Unit M.	3	G-Lees	Bevel	Springs.	¾ F.	Own	Springs.	102	30x3½	C	Wd.	Cant	Stewart.	3	B.	R.	B.
Chevrolet FA 935		4	3½x5½	21.7	170.9	4.25-1	Own	I.	H	T.	Sp-Pr	G.	A-Lite-2	6	Remy	⅞	Zenith	V.	C.	Unit M.	3	Warner	Bevel	Springs.	¾ F.	Own	Springs.	108	33x4	SS	Wd.	Cant	Stewart.	3	BP.	R.	B.
Chevrolet D 1385		8	3½x4	36.5	286.3	4.25-1	Own	I.	H	P.	Cir-Sp	G.	A-Lite-2	6	Remy	⅞	Zenith	V.	C.	Unit M.	3	Warner	Sp.B.	Springs.	F.	Own	Tor.T	120	34x4	SS	Wd.	Cant	Stewart.	3	BP.	R.	B.
Cole 8-60 1995		8	3½x4½	39.2	346.4	4.45-1	North	L.	S	P.	Pr		G. Delco-2	6	Delco	⅞	Stmbg	V.	C.	Unit M.	3	Own	Sp.B.	Springs.	F.	Clumba	Springs.	127	35x4½	SS	Wd.	S-E	Warner.	3	BP.	R.	B.
Columbia 1295		6	3½x4½	25.3	224	4.75	Cont	L.	H	P.	Sp-Pr	P.	W-Lnr-2	6	A.Kent	⅞	Stmbg	V.	P.	Unit M.	3	Warner	Sp.B.	Springs.	¾ F.	Timken	Tor.A	115	32x4	SS	Wd.	Cant	Stewart.	3	BP.	R.	B.
Commonwealth Ultra 4-40 965		4	3½x5	19.6	192.4	4.00-1	Lycmg	L.	H	T.	Cir-Sp	G.	Dynto-2	6	A.Kent	⅞	Carter	V.	D.	Unit M.	3	Drstn	Bevel	Springs.	F.	Peru	Springs.	112	32x3½	C	Wd.	¾ Ell	VanS	2	B.	R.	B.
Crawford 2250		6	3½x5½	29.4	303.1	4.25-1	Lycmg	L.	H	T.	Cir-Sp	P.	Dynto-2	6	Conn	⅞	Zenith	G.	P.	Unit M.	3	Covert	Bevel	Tor.T	F.	Peru	Tor.T	{122½ 114½	32x4 32x3½	SS	Wd.	S-E Opt.	Stewart.	3	R.	R.	R.
Crow-Elkhart CE-33-35 935		4	3½x5	19.6	192.4	4.50	Cont	L.	H	P.	Cir-Sp		West-2		Bosch	⅞	Stmbg	V.	D.	Unit M.	3	B-Lipe	Sp.B.	Springs.	F.	Timken	Tor.T	{132 142	35x5	Opt.	Opt.	¾ Ell	Warner.	3	R.	R.	R.
Cunningham V {4250 4750		8	3½x5	45	441.7	4.08-1	Own	L.	H	P.	Pr	G.	West-2	6	West	⅞	Stmbg	V.	D.	Unit M.	3	B-Lipe	Sp.B.	Springs.	¾ F.	Timken	Tor.A	127	34x4½	QDR	Wd.	S-E	Warner.	3	BR.	R.	R.
Daniels B 3100		8	3½x5	33.8	331.8	4.45-1	Her-Sp	L.	H	P.	Pr	G.	West-2	6	West	⅞	Zenith	V.	D.	Unit M.	3	B-Lipe	Sp.B.	Springs.	F.	Clumba	Springs.	119	34x4		Wd.	S-E	Stewart.	3	B.	R.	B.
Davis H-1 1485		6	3½x4½	25.3	224.0	4.42-1	Cont	L.	H	P.	Sp-Pr	P.	Delco-2	6	Delco	⅞	Stmbg	V.	C.	Unit M.	3	Warner	Sp.B.	Springs.	F.	Clumba	Springs.	124	34x4½		Wd.	S-E	Stewart.	3	B.	R.	B.
Davis J 1785		6	3½x5½	29.4	303.1	4.42-1	Cont	L.	H	P.	Sp-Pr	G.	Delco-2	6	Delco	⅞	Stmbg	V.	C.	Unit M.	3	Warner	Sp.B.	Springs.	F.	Timken	Springs.	119	33x4	SS	Wd.	S-E	Stewart.	3	B.	R.	R.
Detroiter Six-45 1395		6	3½x4½	25.3	224.0	4.75-1	Cont	L.	H	P.	Sp-Pr	P.	A-Lite	7	Conn	⅞	Ball	V.	P.	Unit M.	3	Detroit	Sp.B.	Springs.	S-F	Timken	Springs.	119	33x4	SS	Wd.	S-E	Stewart.	3	B.	R.	R.
Dispatch G 1210		4	3½x5	22.5	220.9	4.00-1	Wis	L.	H	T.	Pr	G.	USL-1	12	Bosch	½	Rayfield	V.	CU	Amid	4	Own	Int.C.	Rad.Rd	D.	Own	Rad.Rd	120	36x3½	QD	Wd.	Ell	Corbin	3	B.	B.	B.
Dixie Flyer LS-35 895		4	3½x5	16.9	165.9	4.75-1	Lycmg	L.	H	T.	Cir-Sp	P.	Dynto-2	6	Conn	⅞	Carter	V.	D.	Unit M.	3	G-Lees	Sp.B.	Tor.T	F.	Peru	Tor T	112	32x3½	SS	Wd.	¾ Ell	VanS	2	Brp.	BR.	B.
Doble Steamer 2500		2	5 x4		314.0	1.25-1	Own			P.	Sp-Pr	P.	Dynto-2	6	Conn	⅞	Stewart	V.	D.	Unit M.	3	Own		Springs.	S-F	Americ'n	Tor.A	135	35x5		Wd.	S-E	Waltham	2	B.	B.	B.
Dodge 835		4	3½x4½	24	212.3	4.00-1	Own	L.	H	P.	Pr	G.	West-2	6	Bosch	⅞	Stmbg	V.	D.	Unit M.	3	Own	Sp.B.	Springs.	F.	Timken	Tor.T	130	36x4½	SS	Wd.	Plat	Warner.	7	R.	R.	R.
Dorris 1-C-6 2785		6	4 x5	38.4	377.0	4.08-1	Own	I.	H	P.	Cir-Sp	I.	N-East-1	12	Delco	⅞	Carter	G.	C.	Unit M.	3	Mech	Bevel	Springs.	¾ F.	W-Weiss	Tor.T	105	30x3½	QD	Wd.	Cant	Stewart.	2	B.	Brp.	B.
Dort 9 725		4	3½x5	16.9	165.9	4.07-1	Own	L.	H	T.	Cir-Sp	P.	West-2	6	Conn	⅞																						
Elcar D.E.F. 845		4	3½x5	19.6	192.4	4.08-1	Lycmg	L.	H	T.	Cir-Sp	P.	Dynto-2	6	Delco	⅞	Carter	V.	P.	Unit M.	3	Mech	Sp.B.	Springs.	F.	Salsbry.	Springs.	115	32x3½	SS	Opt.	S-E	Stewart.	2	BP.	BR.	B.
Elgin 1095		6	3 x4½	21.6	180.2	4.50-1	Falls	I.	H	T.	Cir-Sp	P.	Wagnr-2	6	Remy	⅞	Stmbg	V.	P.	Unit M.	3		Sp.B.	Springs.	F.	Adams	Tor.A	117	33x4			Cant	Stewart.	3	B.	B.	R.
Empire 50-51 1165		4	3½x5	24	235.8	4.00-1	Teetor	T.	H	T.	Cir-Sp		A-Lite-2	6	Conn	⅞	Stmbg	V.	D.	Unit M.	3	Mechs	Bevel	Springs.	S-F	Peru	Tor.T	115	33x4	SS	Wd.	S-E	Stewart.	3	BP.	BR.	B.
Empire 70A-71 1345		6	3½x4½	25.6	224.0	4.08-1	Cont	L.	H	P.	Sp-Pr		A-Lite-2	6	Conn	⅞	Stmbg	V.	C.	Unit M.	3	Mechs	Sp.B.	Springs.	S-F	Hess	Springs.	120	34x4	SS	Wd.	S-E	Stewart.	3	BP.	BR.	B.
Fiat 55-E-17 5500		4	5½x6½	42	557.0	2.75-1	Own	L.	H	P.	Pr	G.	West-2	6	Bosch	⅞	Zen.Sp	P.	D.	Amid	4	Own	Bevel	Tor.T	F.	Own	Tor.T	140	35x5	QD	Wd.	S-E	Warner.	3	B.	B.	B.
Ford T 365		4	3¾x4	22.5	176.7	3.62-1	Own	L.	S	T.	Sp-Gr	F.	Own	12	Own	½	Hol-Kng	G.	D.	Unit M.	2	Own	Bevel	Tor.T	S-F	Own	Tor.T	100	30x3½	C	Wd.	Trans	None	2	P.	R.	R.

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PASSENGER CARS—Continued

MAKE AND MODEL	Price	No. of Cylinders	Bore and Stroke, Inches	S.A.E. H.P.	Piston Displacement Cubic Inches	High Gear Ratio	Make of Engine	Cylinder Shape	Camshaft Drive	Water Circulation	LUBRICATION System	LUBRICATION Type of Pump	ELECTRIC SYSTEM Make	ELECTRIC SYSTEM Voltage	IGNITION Make	IGNITION Plug	CARBURETION Make of Carburetor	CARBURETION Fuel Feed	Clutch Type	TRANSMISSION GEARSET Location	TRANSMISSION GEARSET Forward Speeds	TRANSMISSION GEARSET Make	TRANSMISSION Final Drive	TRANSMISSION Car Drives Through	TRANSMISSION Rear Axle Type	TRANSMISSION Make of Rear Axle	TRANSMISSION Torque Taken By	RUNNING GEAR Wheelbase	RUNNING GEAR Tire	RUNNING GEAR Rims	RUNNING GEAR Wheels	RUNNING GEAR Rear Springs	Make of Speedometer	BEARINGS Number Crankshaft Bearings	BEARINGS Gearset	BEARINGS Rear Axle	BEARINGS Front Wheel
Nash	681 / 684	1295	6	3½x5	25.35	249.0	4.50-1	Own	I.	G	P.	Cir-Sp	G.	Delco	6	Delco	⅞	Marvel	V.	P.	Unit M.	3	Own	Sp.B.	Springs.	S-F.	Own	Springs.	121	34x4	SS	Wd.	S-E	Stewart	3	R.	R.	R.
National	6	1995	6	3½x5½	29.4	303.1	4.58-1	Own	L.	H	P.	Sp-Pr	P.	West-2	6	Dixie	⅞	Rayfield	V.	C.	Unit M.	3	Own	Sp.B.	Springs.	F.	Clumba	Tor.R.	128	34x4½	QDR	Wd.	Cant.	Warner	3	B.	R.	R.
National	12	2595	12	2½x4½	39.7	4.58–1	5.00-1	Own	L.	H	P	Pr	G.	Bijur-2	6	Delco	⅞	Rayfield	V.	C.	Unit M.	3	Own	Sp.B.	Springs.	F.	Clumba	Tor.R.	128	34x4½	QDR	Wd.	Cant.	Warner	3	B.	R.	R.
Nelson		1400	4	3½x4½	15.6	145.7	4.25	Own	I.	B	T.	Cir-Sp	G.	U.S.L.-1	12	Bosch	⅞	Zenith		D.	Unit M.	3	Own	Sp.B.	Sub-Fr.	F.	Own		104	32x4		Wd.	S-E	Stewart	2	BR.	BR.	B.
Oakland	34–B	990	6	2½x4½	19	177.0	4.50-1	North	I.	H	P.	Cir-Sp	P.	Delco-2	6	Delco	⅞	Marvel	V.	C.	Unit M.	3	North	Bevel.	Springs.	F.	West.M.	Springs.	112	32x4	SS	Wd.	S-E	Stewart	3	Brp.	R.	B.
Ogren	102		6	3½x5½	33.8	347.9	3.75-1	Cont	L.		P.	Pr	G.	West-1	6	Bosch	⅞	Rayfield	V.	D.	Unit M.	3	Muncie	Bevel.	Springs.	F.	Timken	Springs.	132	34x4½		Wr.	S-E	Stewart		R.		R.
Oldsmobile	37	1185	6	2½x4½	18.9	178.2	4.42-1	North	I.	H	P.	Cir-Sp	G.	Delco-2	6	Delco	⅞	Johnsn	V.	C.	Unit M.	3	Own	Sp.B.	Springs.	F.	West.M.	Springs.	112	32x4	SS	Wd.	S-E	Stewart	3	BR.	BR.	R.
Oldsmobile	45	1467	8	2½x4½	26.4	246.7	4.92-1	North	L.	H	P.	Pr	G.	Delco-2	6	Delco	⅞	Johnsn	V.	C.	Unit M.	3		Sp.B.	Springs.	F.	West.M.	Springs.	120	34x4	SS	Wd.	½ Ell.	Stewart	2	BR	BR	R.
Olympian		965	4	3½x4½	22.5	187.7	4.08-1			C	T.		P.	A-Lite-2	6	Conn		Carter	V.	D.		3			Springs.	F.		Springs.	114	32x3½		Wd.			3	B.	R.	B.
Overland	90	770	4	3½x5	18.2	178.9	3.75-1	Own	L.	H	T.	Cir-Sp	P.	A-Lite-1	6	Conn	⅞	Tilltsn	V.	C.	Unit X.	3	Own	Bevel	Tor.T.	½ F.	Own	Tor.T.	106	31x4	C.	Wd.	Cant.	Stewart	2	BR	BR.	R.
Overland	85–B–4	920	4	4½x4½	27.2	240.5	4.00-1	Own	L.	H	T.	Cir-Sp	G.	A-Lite-2	6	Conn	⅞	Tilltsn	V.	C.	Unit X.	3	Own	Bevel	Tor.T.	½ F.	Own	Tor.T.	112	32x4	SS	Wd.	Cant.	Stewart	5	BR	BR.	R.
Owen Magnetic	M–25	3300	6	3½x5½	29.4	303.1	4.08-1	Cont	L.	H	P.	Sp-Pr	P.	Own	14	Bosch	⅞	Zenith	V.	Om		6		Sp.B.	Springs.	½ F.	Timken	Springs.	125	34x4½	SS	Wd.	S-E	Warner	3		R.	R.
Owen Magnetic	O–36	3950	6	3½x5½	33.6	364.5	3.50-1	Buda	L.	H	P.	Sp-Pr	G.	Own	28	Bosch	⅞	Zenith	V.	Om		6		Sp.B.	Springs.	F.	Amer	Tor.T.	136	35x5	SS	Wr.	S-E	Warner	4		R.	R.
Packard	3–25 / 3–35	3700 / 4100	12	3 x5	43.2	424.1	4.36-1	Own	L.	C	P.	Pr	G.	Bijur-2	6	Delco	⅞	Own	P.	D.	Unit M.	3	Own	Sp.B.	Springs.	S-F.	Own	Tor.A	128 / 136	35x5	QD.	Wd.	S-E	Walthm.	3	B.	B.	R.
Paige	6–39	1330	6	3½x5½	23.4	230.1	4.41-1	Rutnbr	L.	H	P.	Sp-Pr	P.	G&D-2	6	Remy	⅞	Stmbg	G.	D.	Unit M.	3	Own	Sp.B.	Tor.T.	½ F.	Salsbry.	Tor.T.	117	32x4	SS	Wd.	Cant.	Stewart	3	BR	BR.	B.
Paige	6–55	1775	6	3½x5½	29.4	303.1	4.35-1	Cont	L.	H	P	Sp-Pr	P.	Remy-2	6	Remy	⅞	Rayfield	V.	D.	Unit M.	3	Own	Sp.B.	Springs.	½ F.	Salsbry.	Tor.T.	127	35x4½	SS	Wd.	Cant.	Stewart	3	BR	BR	B.
Pan-American		1500	6	3½x5	23.4	230.0	4.45-1	Rutnbr	L.	H	P	Pr	G.	G&D	6	G&D	⅞	Rayfield	V.	D.	Unit M.	3	Warner	Sp.B.	Springs.	S-F.	Timken	Springs.	120	33x4½	SS	Wd.	S-E	Stewart	3	B.	R.	B.
Paterson	6–45	1295	6	3½x4½	25.4	224.0	4.50-1	Cont	L.	H	P.	Sp-Pr	P.	Delco	6	Delco	½ L	Stmbg	V.	C.	Unit M.	3	Detroit	Sp.B.	Springs.	F.	Hess	Springs.	117	32x4	C.	Wd.	½ Ell.	Stewart	3	B.	R.	B.
Peerless	56	2340	8	3½x5	33.8	331.8	4.90-1	Own	L.	H	P.	Pr	G.	A-Lite-2	6	A.Kent	⅞	Ba.ll	V.	D.	Unit M.	3	B-Lipe	Sp.B.	Springs.	S-F.	Timken	Springs.	125	35x4½	SS	Wd.	Plat	Warner	3	BR.	R.	R.
Pennsy		1035	4	3½x4½	22.5	187.7	4.00-1	G.B.&S.	L.	C	T.		G.	Dynto-2	6	Conn		Zenith		D.		3	G-Lees	Bevel.	Springs.	S-F.	W-Weiss	Springs.	115	32x4		Wd.	S-E	VanS	3	R.	R.	R.
Pennsy	6	1335	6	3½x4½	25.4	224	4.58-1	Cont	L.	H	P.			Heinse	6			Schblr	V.	P.	Unit M.	3	Detroit	Sp.B.	Springs.	F.	Clumba	Springs.	120	33x4			½ Ell.	VanS				
Pierce-Arrow	38–C–4	4800	6	4 x5½	38.4	414.7	3.78-1	Own	T.	H	P.	Pr	G.	West-2	6	Bosch	⅞	Own	P.	C.	Amid	4	Own	Sp.B.	Springs.	S-F.	Own	Tor.T.	134	34x4½	QD.	Wd.	½ Ell.	Stewart	7	BP.	BR	R.
Pierce-Arrow	48–B 4	5500	6	4½x5½	48.6	524.8	3.53-1	Own	T.	H	P.	Pr	G.	West-2	6	Bosch	⅞	Own	P.	C.	Amid	4		Sp.B.	Springs.	S-F.	Own	Tor.T.	142	35x5	QD.	Wd.	½ Ell.	Stewart	7	BP.	BR	R.
Pierce-Arrow	66–A–4	6500	6	5 x7	60	824.7	2.88-1	Own	T.	H	P.	Pr	G.	West-2	6	Bosch	⅞	Own	P.	C.	Amid	4		Sp.B.	Springs.	S-F.	Own	Tor.T.	147½	36x5½	QD.	Wd.	½ Ell.	Stewart	7	BP.	BR	R.
Pilot	6–45	1295	6	3½x5	23.4	230.1	4.25-1	Teetor	L.	H	P.	Sp-Pr	P.	Delco-2	6	Delco	⅞	Tiltsn		P.	Unit M.	3	Muncie	Sp.B.	Springs.	F.	Hess	Tor.A	120	32x4	SS	Wd.	Cant.	Stewart	3	B.	BR	R.
Premier	6–B	2285	6	3½x5½	27.3	295.3	4.45-1	Own	I.	H	P.	Sp-Pr	G.	Delco-2	6	Delco	⅞	Johnson	V.	P.	Unit M.	3	Detroit	Sp.B.	Springs.	S-F.	Timken	Springs.	125½	35x4½	SS	Wd.	S-E	Warner	3	BP.	R.	R.
Princess	4–36–F	825	4	3½x4½	22.5	187.7	4.25-1	G.B.&S.	L.	C	T.	Cir-Sp	P.	Disco-2	6	Splitdrf	⅞	Schblr	V.	D.	Unit M.	3	G-Lees	Sp.B.	Springs.	F.	Own	Springs.	108	32x3½		Wd.	½ Ell.	VanS	3	BR	BR	B.
Regal	4–32	795	4	3½x4½	19.6	182.8	4.25-1	Own	L.	H	T.	Cir-Sp	P.	A-Lite	6	A.Kent	½	Carter	V.	C.	Unit M.	3	G-Lees	Bevel	Tor.T.	F.	Peru	Tor.T.	108	30x3½	QD.	Wd.	Cant.	Stewart	3	B.	R.	B.
Reo	R	985	4	4½x4½	27.2	240.5	4.30-1	Own	L.	H	P.	Cir-Sp	P.	Remy-2	6	Remy	½ L	Johnson	G.	D.	Amid	3	Own	Sp.B.	Springs.	S-F.	Own	Tor.A	115	34x4	SS	Wd.	½ Ell.	Stewart	3	R.	R.	R.
Reo	M	1385	6	3½x5½	30.4	306.6	4.30-1	Own	L.	H	P.	Cir-Sp	P.	Remy-2	6	Remy	½ L	Rayfield	V.	D.	Amid	3	Own	Sp.B.	Springs.	F.	Own	Tor.A	126	34x4½	SS	Wd.	Cant.	Stewart	3	R.	R.	R.
Roamer		1950	6	3½x5	23.4	230.1	4.42-1	Rutnbr	L.	H	P.	Sp-Pr	G.	Bijur-2	6	Bosch	⅞	Stmbg	V.	DD	Unit M.	3		Sp.B.	Springs.	½ F.	Hess	Springs.	127	34x4	SS	Wr.	S-E	Warner	3	B.	B.	B.
Saxon	B–5–R	395	4	2½x4	12.1	94.0	5.00-1	Cont	L.	H	T.	Cir-Sp	P.	Wagnr-2	6	A.Kent	⅞	Schblr	G.	D.	Unit X.	3		Bevel	Tor.T.	S-F.	Timken	Tor.T.	96	30x3	QD.	Wd.	Cant.	Stndrd	3	RP.	BR	B.
Saxon	S–4	935	6	2½x4½	19.8	175.3	4.75-1	Cont	L.	H	T.	Cir-Sp	P.	Wagnr-2	6	Remy	⅞	Stmbg	G.	D.	Unit X.	3		Sp.B.	Tor.T.	S-F.	Timken	Tor.T.	112	32x3½	SS	Wd.	Cant.	Stewart	3	RP.	R.	R.
Sayers Six		1295	6	3½x4½	25.3	224.0		Cont						Delco	6	Delco			V.	D.				Sp.B.	Springs.	F.		Springs.		32x4	SS					BR.		
Scripps–Booth	G	1250	4	3½x4	21.7	170.9	3.7-1	Mason	I.	H	P.	Cir-Sp	G.	Remy	6	Remy	⅞	Zenith	V.	C.	Unit M.	3	Warner	Bevel	Springs.	½ F.	W.W	Tor.A	(110	30x3½	SS	Wr.	Cant.	Stewart	3	BP.	BR.	B.
Scripps–Booth	D	1425	8	2½x3½	22.1	162.3	4.80-1	Ferro	I.	H	T.	Pr	G.	Wagnr-2	6	Remy	⅞	Zenith	V.	D.	Unit M.	3	Warner	Sp.B.	Springs.	½ F.	Russell	Tor.A	(120	32x4	C.	Wr.	Cant.	Stewart	2	BP.	BR.	B.
Simplex		7000	6	4½x6½	45.9	563.7		Own	L.	C	P.	Pr	G.	Bosch-2	12	Eismn	⅞	Newcmb	P.	D.	Unit M.	4	Own	Sp.B.	Springs.	F.	Own	Springs.	143½	37x5½	QD.	Wd.	S-E		3	B.	B.	R.
Singer	17	3800	6	4 x5½	38.4	414.7	3.77-1	Her-Sp	T.	H	P.	Pr	G.	West-1	6	Bosch	⅞	Rayfield	V.	D.	Unit M.	4	Muncie	Sp.B.	Springs.	F.	Timken	Tor.A	138	35x5	QD.	Wr.	Cant.	Warner	3	B.	R.	R.
Standard	C	2450	8	3½x5	33.8	331.8	4.45-1	Her-Sp	L.	H	P.	Pr	G.	West-2	6	Splitdrf	⅞	Zenith	V.	D.	Unit M.	3	G-Lees	Sp.B.	Springs.	S-F.	Timken	Springs.	127	34x4½		Wd.	S-E	Stewart	3	BR.	Brp.	R.
Stanley	Steamer	2200	2	4 x5			1.5 –1						P.												Springs.		Timken		130	35x4½	SS		Ell	Stewart				
Stearns	SKL4–32	1785	4	3½x5½	22.5	248.5	4.50-1	Own	I.	C	P.	Sp-Pr	G.	West-2	12	Remy	⅞	Schblr	V.	D.	Unit M.	3	Own	Sp.B.	Springs.	S-F.	Own	Springs.	119	34x4	QD.	Opt.	Cant.	Stewart	3	BR.	BR.	B.
Stearns	SK8–33	2575	8	3½x5	33.8	331.8	4.75-1	Own	I.	C	T.	Sp-Pr	G.	West-2	12	Remy	⅞	Rayfield	V.	D.	Unit M.	3	Own	Sp.B.	Springs.	S-F.	Own	Springs.	125	35x4½	QD.	Opt.	Cant.	Stewart	3	BR.	BR.	BR.
Stephens	Salient Six	1485	6	3½x4½	25.3	224.0	4.75-1	Own	I.	H	T.	Pr	G.	Delco	6	Delco	½	Stmbg	V.	P.	Unit M.	3	Mech	Bevel.	Springs.	F.	Hess	Springs.	117½	32x4		Wd.	S-E	VanS	3	B.	R.	R.
Studebaker	SF4–40	1050	4	3½x5	24	235.8	4.00-1	Own	L.	H	P.	Cir-Sp	G.	Wagnr-2	6	Remy	½	Schblr	V.	C.	Unit X.	3	Own	Bevel	Rad.Rd	F.	Own	Tor.A	112	34x4	SS	Wd.	½ Ell.	Stewart	3	R.	R.	R.
Studebaker	ED6–50	1385	6	3½x5	36.3	353.8	3.70-1	Own	L.	H	P.	Cir-Sp	G.	Wagnr-2	6	Remy	½	Schblr	V.	C.	Unit X.	3	Own	Bevel	Rad.Rd.	F.	Own	Tor.A	122	35x4½	SS	Wd.	½ Ell.	Stewart	4	R.	R.	R.
Stutz		2750 / 2550	4	4½x6	30.6	360.8	3.50-1	Own	T.	H	P.	Cir-Sp		Remy-2	8	Bosch	½	Stmbg		C.	Unit X.	3	Own	Bevel	Tor.T.	½ F.	Own	Rad.Rd	(130 / (120	32x4½ / 32x4½	SS	Wr.	S-E	Stewart	3	B.	R.	B.
Velie	38	1265	6	3½x4½	25.3	224.0	4.33-1	Cont	L.	H	P.	Sp-Pr	P.	Remy-2	6	Remy	⅞	Rayfield	V.	P.	Unit M.	3	Durstn	Sp.B.	Springs.	S-F.	Timken	Springs.	115	32x4	SS	Opt.	½ Ell.	Stewart	3	BP.	R.	R.
Velie	39	1595	6	3½x5½	29.4	303.1	4.08-1	Cont	L.	H	P.	Sp-Pr	P.	Remy-2	6	Remy	⅞	Rayfield	V.	P.	Unit M.	4	Muncie	Sp.B.	Springs.	S-F.	Timken	Springs.	124	33x4½	SS	Opt.	½ Ell.	Stewart	3	BR.	R.	R.
Westcott	S–18	1940	6	3½x5½	29.4	303.1	4.45-1	Cont	L.	H	P.	Sp-Pr	P.	Delco-2	6	Delco	⅞	Rayfield	V.	D.	Unit M.	3	B-Lipe	Sp.B.	Springs.	S-F.	Timken	Tor.T.	125	35x4½	SS	Wd.	Cant.	Warner	3	BR.	R.	R.
White	16 Valve Four	4600	4	4½x5½	28.9	326.3		Own	T.	H	P.	Pr	G.	Lee-N-2	12	Bosch	⅞	Own	V.	P.	Unit M.	4	Own	Sp.B.	Springs.	S-F.	Own	Springs.	137½ / 124½	37x5 / 33x4½		Wd.	S-E		3	B.	B.	B.
Willys-Knight	88–4	1485	4	4½x4½	27.2	240.5	4.30-1	Own	I.	C	T.	Sp-Pr	P.	A-Lite-2	6	Conn	⅞	Tiltsn	V.	C.	Unit X.	3	Own	Sp.B.	Tor.T.	F.	Own	Tor.T.	121	34x4½	SS	Wd.	Cant.	Stewart	3	BR.	R.	R.
Willys-Knight	88–8	1985	8	3½x4	36.4	286.3	4.60-1	Own	I.	C	T.	Pr	P.	A-Lite-2	6	Remy	⅞	Zenith	V.	C.	Unit X.	3	Own	Sp.B.	Tor.T.	F.	Own	Tor.T.	125	34x4½	SS	Wd.	Cant.	Stewart	2	BR.	R.	R.
Willys	89	1320	6	3½x5½	29.4	303.1	4.00-1	Cont	L.	H	P.	Pr	G.	A-Lite-2	6	Conn	⅞	Tilltsn	V.	C.	Unit X.	3	Own	Sp.B.	Tor.T.	½ F.	Own	Tor.T.	120	33x4	SS	Wd.	Cant.	Stewart	3	BR.	BR.	R.
Winton	33	2685	6	3½x5½	33.7	347.9	4.45-1	Own	L.	C	P.	Pr	P.	Bijur-2	6	Bosch	⅞	Rayfield	V.	D.	Unit M.	4	Own	Sp.B.	Springs.	F.	Own	Tor.T.	128	36x4½	QD.	Wd.	½ Ell.	Warner	4	BR.	R.	R.
Winton	48	3500	6	4½x5½	48.6	524.8	4.08-1	Own	L.	C	P.	Pr	P.	Bijur-2	6	Bosch	⅞	Rayfield	V.	D.	Unit M.	4	Own	Sp.B.	Springs.	F.	Own	Tor.T.	138	37x5	QD.	Wd.	½ Ell.	Warner	4	BR.	R.	R.
Woods	54	2950	4	2½x4	12.1			Cont				Pr							G.							S-F.			124	35x4½			Cant					
Yale	K	1650	8	3½x4½	31.3	276.1	4.45-1	Mas-Ph	L.	C	T.	Cir-Sp		Disco	6	Remy	⅞	Rayfield	V.	D.	Unit M.	3	Muncie	Bevel	Springs.	S-F.	Timken	Springs.	126			Wd.	½ Ell.	Stewart	2	B.	R.	R.
Yale	M	1885	8	3 x5	28.8	282 8	4.45-1	Colonial	L.	C	T.	Cir-Sp		Dynto	6	Remy	⅞	Zenith	V.	D.	Unit M.	3	Detroit	Sp.B.	Springs.	S.F.	Timken	Springs.	126			Wd.	S-E	Stewart	2	B	R.	R.

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Lamp Bulbs

MOTOR WORLD GUIDE

Lamp Bulbs

Car	HEAD LAMPS Volt	HEAD LAMPS Cp.	SIDE LAMPS Volt	SIDE LAMPS Cp.	TAIL LAMP Volt	TAIL LAMP Cp.	DASH LAMP Volt	DASH LAMP Cp.	Fuses Amp.	Socket	Wiring System	Type of Dimmer	Remarks
Abbott-Detroit	6-8	5	6-8	4H	6-8	2	6-8	2		E.S.	S.		Dash Ediswan D.
Allen	6-8	18	6-8	4	6-8	2	6-8	2	15	E.S.	S.	Resist	Side, tail and dash fuses 5 amp.
American	6-8	15	6-8	4H	3-4	2	3-4	2	20	E.S.	S.		Dash lamp double.
Anderson	6-8	21	6-8	12H	6-8	4	6-8	4		E.S.	S.		..
Apperson	6-8	18			6-8	2	6-8	2	10	E.D.	D.	Resist	
Arbenz	6-8	15	6-8	6	6-8	2	6-8	2	25	E.S.	S.		
Auburn 39	6-8	15	6-8	4	6-8	2	6-8	2	25	E.S.	S.		Dash Ediswan D.
Auburn 44	6-8	18	6-8	12	6-8	2	6-8	2		E.S.	S.		Dash Ediswan D.
Austin	6-8	24	6-8	4H	6-8	4				E.S.	S.		
Bell	6-8	18	6-8	4H	6-8	2	6-8	2	15	E.S.	S.		Dash Ediswan D.
Biddle	6-8	21	6-8	4H	6-8	2	6-8	2	10	E.S.	S.		Dash Ediswan D.
Bimel D	6-8	15			6-8	2	6-8	2		E.S.			
Bimel	12-16	15			12-16	2	12-16	2		E.S.			Other models.
Brewster	12-16	40	12-16	4H	6-8	2	6-8	2	10	E.S.	S.		Dash Ediswan D.
Briscoe	6-8	20			6-8	2	6-8	2	20	E.S.	S.	Resist	Dash Ediswan D.
Bour Davis	6-8	15			6-8	2	6-8	2		E.S.			
Buick	6-8	15	6-8	4H	6-8	2	6-8	2	C.B.	E.S.	S.		
Cadillac	6-8	18	6-8	6	3-4	2	3-4	2	C.B.	E.S.	S.		
Case	6-8	18	6-8	4H	6-8	2	6-8	2	20	E.S.	S.		
Chalmers	6-8	15	6-8	4H	6-8	4	6-8	4	15		S.	Series	
Chandler	6-8	18	6-8	4H	6-8	2	6-8	2	20	E.S.	S.		
Chevrolet	6-8	12			6-8	2	6-8	2		E.D.			
	6-8	15			6-8	2	6-8	2		E.D.			
Cole	6-8	21	6-8	2H	3-4	2	3-4	2		E.S.	S.		Dash lamp Ediswan D.
Columbia	6-8	15	6-8	4	6-8	2	6-8	2	None	E.S.	S.		Dash Ediswan D.
Commonwealth	6-8	15	6-8	4H	6-8	4	6-8	2		E.S.	S.		Dash lamp Ediswan D.
Crawford	6-8	15	6-8	4H	6-8	4	6-8	2	15	E.S.	S.		Dash lamp Ediswan D.
Crow-Elkhart	6-8	15	6-8	4H	6-8	2	6-8	2	10	E.D.	S.	Series	Dash lamp Ediswan D.
Cunningham	6-8	15	6-8	4	6-8	4	6-8	4	15	E.S.	S.		Tail lamp Ediswan S.
Daniels	6-8	18	6-8	4H	6-8	2	6-8	2	15	E.S.	S.	Warner lens	Dash lamp Ediswan D.
Davis	6-8	15			6-8	4	6-8	4		E.D.	S.	Resist	Dash lamp Ediswan D.
Detroiter	6-8	15			6-8	2	6-8	2		E.D.			
Dispatch	12-16	21			12-16	2	6-8	2	2	E.D.	D.		Two dash lamps.
Dixie	6-8	15			3-4	2	3-4	2	10	E.D.	D.	Resist	Fuses 1-2 amp. in tail lamp, 1 amp. in dash
Dodge	12-16	15			12-16	2	12-16	2		E.S.	S.	Resist	
Dorris	6-8	15	6-8	4H	6-8	2	6-8	2	15	E.S.	S.	Resist	
Dort	6-8	15			6-8	4	6-8	2	10	E.S.	S.	Resist	Dash lamp Ediswan D.
Elgin	6-8	21	6-8	4H	6-8	2	6-8	2	20	E.S.	S.		
Elkhart	6-8	15	6-8	4H	6-8	2	6-8	2	15	E.S.	S.		
Empire	6-8	15	6-8	4H	3-4	2	3-4	2	20	E.S.	S.		Dash lamp Ediswan D.
Fiat	6-8	15	6-8	4H	6-8	2	6-8	4		E.S.			Tonneau lamp 6 v. 2 cp.
Ford	6-8	15								E.D.			
Franklin	12-16	21	12-16	4H	6-8	2	6-8 12-16	2 2	10	E.D.			Panel 12-16 v., 2 cp.
Glide	6-8	15	6-8	4H	6-8	2	6-8	2	15	E.S.	S.		
Grant	6-8	15	6-8	4H	6-8	2	6-8	2	20		S.	Resist	Dash lamp Ediswan D.
HAL	6-8	18			6-8	2	6-8	4	15	E.S.			H'dlamps doub., tail and dash single.
Halladay	6-8	15	6-8	4H	6-8	4	6-8	2		E.S.	S.		Dash Ediswan D.
Harroun													Dash Ediswan D.
Haynes	6-8	15	6-8	12H	6-8	2	6-8	2	5	E.D.	D.	Series	
Hollier	6-8	15			6-8	2	6-8	2	20	E.S.	S.	Series	
Howard	6-8	15	6-8	2H	6-8	2	6-8	2		E.S.	S.		
Hudson	6-8	15			3-4	2	3-4	2		E.S.	S.	Resist	Dash lamp Ediswan D.
Hupmobile	6-8	15	6-8	4	6-8	4	6-8	4	15	E.S.	S.	Resist	
Inter-State	6-8	15			6-8	2	6-8	2	10	E.S.	S.	Resist	
Jackson	6-8	15			6-8	2	6-8	2	20	E.D.	S.		
Jeffery	6-8	18	6-8	4H	6-8	2	6-8	2	20	E.S.			
Jones	6-8	21	6-8	2	6-8	2	6-8	2	15	E.S.	S.	Resist	
Jordan	6-8	18	6-8	4H	6-8	2	6-8	2	20	E.S.	S.		
King	6-8	18	6-8	4H	6-8	2	6-8	2	10	E.S.	S.	Series	
Kissel	6-8	18			6-8	2	6-8	2	20	E.D.	S.		Dash lamp single.
Kline	6-8	15	6-8	4	6-8	2	6-8	2	15	E.S.	S.		Fuses 5 amp. in all but hdlps.
Lewis	6-8	15			3-4	2	3-4	2		E.D.	S.	Resist	
Lexington 6R	7	30			6	2	6	4	15	E.S.	S.	D. Bulb	Dash lamp Ediswan D.
		32							5			Hdlamps	Spotlight, 7 v., 21 cp., double contact.
	7	6											
Liberty	6-8	15		H	6-8	2	6-8	2		E.S.	S.		
Locomobile	6-8	21	6-8	6	6-8	4	6-8	2	10	E.S.	S.	Resist	
McFarlan	6-8	24	6-8	12H	6-8	2	6-8	2	10	E.S.	S.	Series	Dash lamp Ediswan D.
Madison	6-8	15	6-8	6H	6-8	4	6-8	4		E.S.	S.		
Marion A	6-8	18	6-8	4	6-8	2	6-8	2	30	E.S.			
B	6-8	21	6-8	4	6-8	2	6-8	2	30	E.S.			
Marmon	12-16	24	12-16	8H	12-16	4	12-16	4	20	E.S.	S.		
Maxwell	12-16	24	12-16		12-16	2	12-16	2	20	E.S.	S.	Resist	
Mercer	12-16	24	12-16	4	12-16	4	12-16	4	10	E.S.	S.	Warner lens	
Metz	6-8	15	6-8	4H	6-8	2	6-8	2	50	E.D.	S.	Shad. rays	
Mitchell	6-8	15			6-8	2	6-8	2	20	E.D.	S.	Series	
Moline-Knight	6-8	15	6-8	6H	6-8	2	6-8	4	20	E.S.	S.	Deflect	
Monroe	6-8	15	6-8	2H	6-8	2	6-8	2		E.S.	S.		
Moon	6-8	15			6-8	2	6-8	4	C.B.	E.S.	S.		Dash lamp Ediswan D.
Murray	6-8	18	6-8	4H	6-8	2	6-8	2	15	E.D.			Dash and tail Ediswan S. Fuses 5 amp. in dimmer.
Nash	6-8	14	6-8	4H	6-8	2	6-8	2	C.B.	E.S.			Dash lamp double.
National	6-8	18	6-8	4H	6-8	2	6-8	2		E.S.			Dash lamp double.
Oakland	6-8	15			6-8	2	6-8	2		E.S.	S.	Resist	Dash lamp Ediswan S.
Ogren	6-8	12	6-8	6	6-8	6	6-8	6		E.S.	S.	Deflect	
Oldsmobile	6-8	15	6-8	4H	6-8	2	6-8	2		E.S.	S.		Dash lamp Ediswan D.
Overland	6-8	15	6-8	4H	3-4	2	3-4	2		E.D.			
Owen O-36	28	21	28	4H	28	2	28	2	10	E.D.	D.		Headlamps Ediswan S.
M-25	14	21	14	4H	14	2	14	2	10	E.D.			
Paige-Detroit	6-8	15	6-8	4H	6-8	2	6-8	2	20	E.S.	S.		Dash lamp Ediswan D.
Paterson	6-8	12	6-8	8H									
Packard	6-8	24	6-8	6H	6-8	2	6-8	4	10	E.D.	S.		Side lamps 6-8 v., 4 cp.
Pathfinder	6-8	15	6-8	4H	6-8	2	6-8	2		E.S.	S.	Warner lens	
Peerless	6-8	15	6-8	4	6-8	2	6-8	2	10	E.S.	S.		
Pierce-Arrow	6-8	21	6-8	4	6-8	4	6-8	4	10	E.S.	S.	Sutterly	
Pilot	6-8	15			6-8	2	6-8	2		E.S.	S.	Resist	
Porter	12-16	25	12-16	6	12-16	3	12-16	3	6-3	E.S.	S.		Dash lamp double.
Premier	6-8	21	6-8	4H	6-8	2	6-8	2	C.B.	E.S.	S.		
Regal	6-8	21			6-8	4	6-8	2		E.S.	S.	Resist	
Reo	6-8	15			3-4	2	3-4	2	5	E.D.	D.	Series	
Ross	6-8	15			6-8	4				E.D.			
Saxon	6-8	12			6-8	2	6-8	2	15	E.S.	S.	Resist	
Scripps-Booth	6-8	15	6-8	4H	6-8	2	6-8	2		E.S.	S.	Series	
Simplex	12-16	40	12-16	4H	6-8	2	6-8	2	10	E.S.	S.		Tail lamp double.
Singer	6-8	15			6-8	2	6-8	2	5	E.S.	S.		Tail lamp double.
Sphinx	6-8	12	6-8	4H	6-8	4			25	E.S.	S.		
Standard	6-8	18	6-8	4	6-8	2	6-8	2	15	E.S.	S.	Series	
Stanley	6-8	18	6-8	4H	6-8	2	6-8	2		E.D.	D.	Warner lens	
Stearns SK8	12-16	24	12-16	4H	12-16	2	12-16	2	20	E.S.	S.		Dash lamp double.
SKL-4	12-16	18	12-16	4H	12-16	2	12-16	2	20	E.S.	S.		Dash lamp double.
Stephens	6-8	21	6-8	4	3-4	2	3-4	2	20	E.S.	S.		
Sterling	12-16	15	12-16	4	12-16	2	12-16	2		E.S.	S.		
Studebaker	6-8	12			6-8	2	6-8	2	10	E.S.	S.	Resist	
Stutz	6-8	21	6-8	4H	6-8	2	6-8	2		E.D.	D.	Warner lens	
Sun	6-8	18			6-8	2	6-8	2	20	E.S.	S.	Resist	
Velie	6-8	15	6-8	4	3-4	2	3-4	2	5	E.S.	S.		Dash lamp double.
Westcott	6-8	15	6-8	4H	3-4	2	3-4	2		E.S.	S.		Dash lamp double.
White	12-16	25	12-16	4H	12-16	4	12-16	4	C.B.	E.D.	D.	Warner lens	
Willys-Knight	6-8	16			3-4	2	3-4	2		E.D.	S.	Series	Tail lamp Ediswan S.
Winton	6-8	21	6-8	12	6-8	4	6-8	2	20	E.S.	S.		
Woods	60	25	30	8	30	10	30	10	10	E.D.	D.		
Yale	6-8	15			3-4	2	3-4	2		E.S.	S.	Series	Dash lamp Ediswan D.

ABBREVIATIONS:—C.B.—Circuit Breaker. D.—Double wiring system. E.D.—Ediswan double contact. E.S.—Ediswan single contact. H.—Small bulbs in headlamps for city driving. Resist.—Resistance S.—Single wiring system. Series—Series connection.

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Tires and Tubes — MOTOR WORLD GUIDE — Tires and Tubes

This table appears in the first issue every month. It is corrected every month and brought up to date.

Name	Trade Name and Tread	28x3	30x3	32x3	30x3½	31x3½	32x3½	34x3½	36x3½	30x4	31x4	32x4	33x4	34x4	35x4	36x4	32x4½	33x4½	34x4½	35x4½	36x4½	37x4½	35x5	36x5	37x5	37x5½	38x5½
ACME	Plain	16.00	17.20	s18.10	23.00	s23.90	24.40	25.80	s27.50	s30.80	s31.90	33.20	34.30	35.50	36.70	38.00	s45.30	46.70	48.30	49.60	51.10	52.60	57.70	59.50	61.40	s76.80	s78.90
	Kam Tread	.....	s17.90	.....	s24.20	s25.10	25.60	.....	.....	.....	s33.50	35.00	36.10	37.40	.....	.....	.....	qc49.00	50.70	52.10	53.70	55.30	60.60	62.60	64.30	.....	.....
	Dimple	18.40	19.60	s21.00	26.40	s27.40	28.00	29.80	s31.60	s35.40	s36.70	38.30	39.60	40.90	42.20	43.70	s52.10	53.70	55.50	57.10	58.80	60.50	66.30	68.50	70.50	s88.30	s90.70
	Hemisphere	.....	s21.60	.....	29.00	.....	30.80	32.70	.....	.....	s40.50	qc42.10	43.60	44.90	46.40	s48.10	.....	.....	.....	62.80	64.70	66.50	s73.00	s75.20	77.70	.....	.....
	Gray and Red Tubes	3.65	3.85	4.15	4.95	5.15	5.45	5.85	6.05	6.05	6.25	6.40	6.65	6.75	6.95	7.15	8.15	8.35	8.45	8.60	8.80	9.05	10.00	10.30	10.55	11.20	11.50
ADVANCE	Plain	s12.75	s13.40	.....	s17.45	s18.35	20.40	s23.80	.....	.....	s26.75	27.25	28.55	29.15	30.15	31.05	.....	s38.05	s39.25	41.10	41.75	43.45	.....	s46.90	s49.65	s74.55	.....
	Non-Skid	s13.35	s14.10	.....	s18.25	s19.30	21.40	s24.95	.....	.....	s28.00	28.60	29.85	30.65	31.50	32.60	.....	s39.95	s41.30	43.10	43.90	45.60	.....	s49.20	s52.15	s78.20	.....
AJAX	Plain	s13.65	s14.45	s18.75	18.60	s19.50	22.55	26.95	28.85	s28.95	30.25	30.80	32.10	32.65	34.10	34.55	.....	.....	43.90	45.55	46.10	47.80	.....	52.50	54.45	.....	.....
	Non-Skid	s15.30	s16.10	s.....	s21.35	s22.20	25.30	29.70	.....	s32.25	33.55	34.10	35.40	35.95	37.40	37.85	qc46.10	qc52.45	48.30	49.95	50.50	52.20	56.85	s56.90	58.85	s78.35	s79.30
	Read King	s14.70	s15.55	.....	s19.95	s20.95	24.25	.....	.....	.....	32.50	33.10	34.55	35.10	.....	37.10	.....	48.40	48.95	51.20	52.05	53.90	61.15	s61.40	63.25	.....	.....
	Gray Tubes	3.20	3.00	.....	3.75	3.85	4.00	4.30	4.50	4.75	4.85	5.05	5.25	5.35	5.50	5.70	6.5	6.35	6.5	6.60	6.85	7.00	8.40	8.50	8.60	9.20	9.35
	Red Tubes	3.50	3.75	.....	4.60	4.75	4.90	5.15	5.40	5.75	5.90	6.05	6.25	6.35	6.50	6.70	7.60	7.80	8.05	8.30	8.50	8.75	9.90	10.00	10.15	10.85	11.05
AMAZON	Ribbed	.....	qs16.75	.....	qs21.70	.....	qc25.05	.....	.....	.....	.....	qc33.90	qc36.30	qc36.90	.....	.....	.....	.....	qc49.20	qc51.45	.....	.....	.....	.....	.....	.....	.....
	Non-Skid	qs16.70	qs17.65	.....	qs22.85	.....	qc26.35	.....	.....	.....	qs34.75	qc35.70	c38.20	c38.85	.....	.....	.....	qc50.35	c51.80	c54.15	c54.90	qc57.45	c64.75	.....	c66.95	.....	.....
	Gray Tubes	3.15	3.50	.....	4.10	.....	4.25	4.50	.....	.....	5.70	5.90	6.15	6.25	6.40	6.50	.....	7.20	7.30	7.45	7.65	7.95	8.55	9.00	9.10	9.25	10.50
AMERICAN	Ribbed or Plain	.....	16.00	.....	20.45	22.10	24.05	.....	.....	.....	32.30	33.00	34.70	35.45	.....	.....	.....	.....	47.40	49.60	50.30	.....	58.35	.....	61.90	.....	.....
	Triple A Non-Skid	.....	16.80	.....	21.35	23.00	24.95	.....	.....	.....	33.30	34.00	35.70	36.45	.....	.....	.....	.....	48.40	50.60	51.35	53.65	59.40	60.30	62.95	.....	.....
	Seal Brown Tubes	3.00	3.25	.....	3.75	3.80	3.85	4.20	.....	.....	4.65	4.80	5.00	5.15	.....	5.60	6.20	6.25	6.30	6.40	6.55	6.70	7.65	7.75	7.90	9.35	9.50
	Red Indian Tubes	3.25	3.50	.....	4.20	4.25	4.30	4.60	.....	.....	5.40	5.50	5.70	5.80	6.00	6.15	6.95	7.00	7.10	7.20	7.35	7.65	8.60	8.85	8.95	10.20	10.40
ARABIAN	Fluted Tread	.....	qs15.60	.....	qs20.05	.....	24.45	.....	.....	.....	s31.05	.....	32.80	33.00	.....	36.05	.....	.....	qc43.45	s46.75	48.45	49.05	.....	.....	54.40	.....	.....
	Non-Skid	.....	qs16.40	.....	qs21.10	.....	25.65	.....	.....	.....	32.65	qc33.90	34.45	34.65	.....	38.95	.....	.....	qc45.60	49.05	50.80	51.50	.....	.....	57.10	.....	.....
	Tubes	3.05	3.10	.....	3.65	3.75	3.90	4.35	.....	.....	4.90	5.05	5.25	5.40	5.70	5.75	.....	.....	6.65	6.80	7.05	7.25	.....	8.50	8.45	.....	.....
ARCADIA	Plain	qs14.00	qs15.20	.....	s19.60	.....	22.25	27.85	.....	qs32.70	s29.80	30.40	31.65	32.60	37.60	34.55	.....	.....	43.40	45.25	45.95	47.90	53.25	s59.15	56.00	s99.75	s103.25
	Non-Skid	.....	qs15.95	.....	s20.60	.....	23.45	29.15	.....	qs34.40	31.45	31.90	33.35	34.25	39.45	36.45	.....	.....	45.70	47.45	48.25	50.25	55.75	s62.40	58.95	s105.00	s108.50
	Red Tubes	3.60	3.70	.....	4.50	.....	4.70	5.60	.....	6.25	6.00	6.10	6.40	6.50	7.30	6.80	.....	.....	7.60	7.75	7.90	8.05	8.95	10.10	9.35	11.00	11.20
	Gray Tubes	3.25	3.35	.....	4.00	.....	4.25	4.50	.....	5.10	4.75	4.95	5.10	5.20	5.85	5.50	.....	.....	6.55	6.65	6.75	6.85	7.90	8.90	8.20	9.65	9.80
ARCHER	Ribbed Tread	.....	.....	.....	.....	.....	qc35.90	.....	.....	.....	.....	qc45.15	qc46.30	qc47.50	.....	qc49.90	.....	qc51.90	qc53.25	qc54.55	qc55.80	.....	qc65.85	qc67.55	qc68.90	.....	qc83.15
	Non-Skid	.....	.....	.....	.....	.....	qc37.80	.....	.....	.....	.....	qc47.10	qc48.25	qc49.45	.....	qc51.80	.....	qc53.85	qc55.20	qc56.45	qc57.70	qc58.95	qc67.80	qc69.50	qc70.80	.....	qc85.10
	Gray Tubes	.....	3.15	.....	3.25	.....	3.40	.....	.....	.....	.....	4.60	4.75	4.85	.....	5.10	.....	6.00	6.05	6.15	6.25	6.35	7.35	7.50	7.65	.....	8.50
	Red Tubes	.....	4.15	.....	4.25	.....	4.40	.....	.....	.....	.....	6.00	6.15	6.30	.....	6.55	.....	7.80	7.85	8.00	8.15	8.20	9.55	9.75	9.95	.....	10.80
ARMSTRONG	Red Tubes	.....	4.00	4.50	4.75	.....	4.95	5.20	.....	5.80	5.90	6.00	6.10	6.25	6.40	6.55	7.65	7.80	7.95	8.10	8.35	8.60	9.45	9.60	9.75	11.60	11.75
BALTIMORE	Plain	17.30	17.70	.....	21.50	o23.85	25.30	27.50	.....	.....	o29.55	30.40	o31.50	32.60	o33.85	34.85	.....	39.20	40.50	o41.75	44.05	o45.25	o51.10	53.55	o55.85	.....	80.20
	Box Tread	20.15	21.15	.....	26.45	o27.30	30.20	32.80	.....	.....	o36.50	37.70	o38.80	40.20	o41.50	43.80	.....	45.45	47.10	o49.90	54.20	o55.30	o61.60	64.00	o65.50	.....	94.80
	Tubes	3.25	3.34	.....	4.30	4.45	4.60	4.95	.....	.....	5.45	5.55	5.75	5.95	6.05	6.20	.....	7.25	7.45	7.60	7.85	8.10	8.90	9.15	9.45	.....	11.05
	Wil-Mot Plain	.....	12.20	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Non-Skid	.....	12.80	.....	16.60	17.55	19.45	.....	.....	.....	25.45	.....	27.15	27.85	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
BATAVIA	Plain	.....	s14.35	.....	qs18.25	.....	qc21.35	.....	.....	.....	.....	qc29.05	qc30.45	qc31.20	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Ribbed	.....	.....	.....	.....	.....	c23.70	c26.90	.....	.....	.....	qc32.30	c33.90	c34.60	qc36.20	cs36.75	cs43.15	qc44.55	c46.00	c48.10	c48.75	cs50.95	c56.40	.....	c59.80	.....	.....
	Security Tread	qs14.40	qs16.80	.....	qs21.35	qs23.00	c24.95	c28.35	.....	.....	qs33.30	c34.00	c35.70	c36.45	c38.10	c38.70	cs45.45	qc46.90	c48.40	c50.60	c51.35	c53.65	c59.40	c60.30	c62.95	cs97.25	cs99.00
	Gray Tubes	2.95	3.05	.....	3.45	3.65	3.80	4.10	.....	.....	4.90	5.05	5.25	5.35	5.45	5.55	6.50	6.60	6.65	6.75	6.90	7.10	8.10	8.25	8.40	9.20	9.45
BERGOUGNAN	Plain	s14.85	s17.70	.....	s21.60	s22.85	25.20	s27.85	.....	35.25	s30.90	32.85	35.20	37.20	s38.00	s40.00	s46.55	47.60	50.35	50.95	51.45	s53.05	59.45	60.70	62.35	s80.40	83.10
	Non-Skid	s16.70	s18.10	.....	s25.20	s26.30	27.55	s29.55	.....	39.65	s34.90	36.50	39.30	40.75	s42.65	s43.70	s52.20	52.90	53.85	55.05	56.70	s59.10	65.15	68.15	69.65	88.75	91.80
	Red Tubes	3.75	3.80	.....	4.45	4.80	4.85	5.20	.....	6.60	6.05	6.25	6.60	6.75	6.95	7.15	7.35	8.10	8.20	8.30	8.65	8.90	9.70	10.00	10.15	11.15	11.20
BESAW	Blackford Non-Skid	.....	qs15.70	.....	qs19.95	qs21.35	c23.60	.....	.....	.....	qs31.50	qc32.05	qc33.90	cs33.90	.....	.....	.....	.....	.....	cs48.60	.....	.....	.....	.....	.....	.....	.....
	BeSaw Non-Skid	.....	24.25	.....	30.30	31.35	35.05	38.00	.....	.....	42.30	43.70	45.00	46.55	48.10	50.75	.....	.....	54.60	57.90	62.75	64.10	71.35	74.15	75.90	.....	.....
	BeSaw Plain	.....	20.50	.....	24.90	27.65	29.30	31.80	.....	.....	34.30	35.55	36.90	38.15	39.30	40.50	.....	.....	46.95	48.40	49.70	51.10	57.80	59.40	60.90	.....	.....
BOONE	Smooth	.....	13.05	.....	16.90	17.80	19.40	.....	.....	.....	25.85	26.40	27.70	28.35	.....	30.10	.....	.....	37.60	39.35	39.95	.....	43.95	.....	46.55	.....	.....
	Ribbed Tread	.....	14.45	.....	18.75	19.85	21.00	.....	.....	.....	28.70	29.35	30.80	31.40	.....	33.45	.....	.....	41.80	43.65	44.35	.....	52.20	.....	55.25	.....	.....
	Non-Skid	.....	17.15	.....	22.20	23.80	25.55	.....	.....	.....	34.00	34.75	36.80	37.30	.....	39.60	.....	.....	49.50	51.75	52.55	.....	61.80	.....	65.45	.....	.....
	Gray Tubes	.....	3.05	.....	3.50	3.60	3.65	.....	.....	.....	4.80	4.95	5.10	5.20	.....	5.45	.....	.....	6.50	6.60	6.70	.....	7.90	.....	8.25	.....	.....
	Red Tubes	.....	4.00	.....	4.55	.....	4.70	.....	.....	.....	6.25	6.45	6.60	6.75	.....	7.05	.....	.....	8.45	8.60	8.75	.....	10.30	.....	10.60	.....	.....
BOWERS	Plain	16.85	17.85	.....	24.00	25.50	26.95	28.80	.....	.....	33.80	35.45	37.25	38.20	39.05	40.95	.....	.....	47.50	49.40	51.26	.....	61.55	63.00	64.35	.....	90.85
	Grip Tread	18.70	19.65	.....	28.30	29.70	31.70	34.55	.....	.....	37.80	38.80	40.05	41.90	42.90	43.90	.....	.....	51.25	53.15	56.00	.....	67.20	69.65	71.85	.....	103.40
	Gray Tubes	3.30	3.80	.....	4.10	4.35	4.60	4.85	.....	.....	5.95	6.10	6.40	6.50	6.60	6.75	.....	.....	7.70	8.10	8.40	.....	9.50	9.70	10.00	.....	11.75
BRAENDER	Plain	qs13.95	qs14.30	qs18.10	q18.35	qs19.15	q21.30	q24.05	qs30.00	qs27.65	q28.20	q28.70	q30.15	q30.80	q32.65	q31.90	41.25	40.05	41.35	43.25	43.95	44.60	49.40	55.90	53.35	qs82.95	cs87.75
	Non-Skid	qs16.20	qs18.45	qs21.00	q21.30	qs22.20	q24.70	q27.20	qs34.80	qs32.05	q32.75	q33.35	q35.00	q35.75	q37.90	q37.00	47.75	46.40	47.95	50.15	51.00	51.75	57.30	64.80	61.90	qs96.20	cs101.75
	Gray Tubes	3.25	3.40	3.60	4.15	4.25	4.40	4.50	5.30	5.30	5.45	5.65	5.75	5.85	6.10	6.30	7.00	7.10	7.20	7.35	7.55	7.90	8.90	9.05	9.15	10.00	10.25
	Red Tubes	3.80	3.70	4.00	4.60	4.70	4.80	5.00	6.00	6.00	6.00	6.20	6.40	6.60	6.80	7.00	7.80	7.90	8.10	8.20	8.40	8.70	9.90	10.00	10.20	11.00	11.25

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Name	Trade Name and Tread	28x3	30x3	32x3	30x3½	31x3½	32x3½	34x3½	36x3½	30x4	31x4	32x4	33x4	34x4	35x4	36x4	32x4½	33x4½	34x4½	35x4½	36x4½	37x4½	35x5	36x5	37x5	37x5½	38x5½
BRUNSWICK	Plain	13.30	qs14.35	.....	qs18.25	s19.60	21.35	c24.20	.....	.....	qs28.45	c29.05	c30.45	c31.20	c32.60	c33.10	c38.85	c40.05	c41.35	c43.30	c43.95	c45.80	c50.75	c51.55	c53.80	s83.10	c92.45
	Skid Not	15.60	qs16.8	.....	qs21.35	qs23.00	24.95	c28.35	.....	.....	qs33.3	c34.00	c35.70	c36.45	c38.10	c38.70	c45.45	c46.90	c48.40	c50.60	c51.35	c53.65	c59.40	c60.30	c62.95	s103.90	c113.00
	Gray Tubes	2.85	2.90	.....	3.45	3.60	3.75	4.10	.....	.....	4.70	4.85	5.05	5.20	5.45	5.65	6.30	6.40	6.50	6.70	6.95	7.30	7.95	8.15	8.25	9.20	9.45
	Red Tubes	3.30	3.40	.....	4.15	4.25	4.40	4.65	.....	.....	5.50	5.65	5.90	6.15	6.30	6.60	7.00	7.15	7.30	7.45	7.70	8.00	8.65	8.85	9.00	10.45	10.80
BULL	Plain	qs13.50	qs14.00	.....	qs17.90	qs19.55	21.10	c23.80	.....	.....	qs27.85	q28.35	c30.00	c30.45	c31.65	cs37.90	.....	.....	cs41.75	c43.25	c43.95	cs53.75	c50.90	cs51.75	c53.65	.....	.....
	Non-Skid	qs15.15	qs15.70	.....	qs19.95	qs21.35	23.60	c26.95	.....	.....	qs31.50	q32.05	c33.90	c34.50	c36.30	cs43.40	.....	.....	cs46.75	c48.60	c49.15	cs60.00	c59.95	cs61.05	c63.10	.....	.....
	Red Tubes	3.30	3.40	3.80	4.15	4.25	4.40	4.65	5.20	5.60	5.50	5.65	5.90	6.15	6.30	6.60	.....	.....	7.30	7.45	7.70	8.30	8.65	8.85	9.00	.....	.....
	Gray Tubes	2.85	2.90	3.35	3.45	3.60	3.75	4.10	4.5	4.90	4.70	4.85	5.05	5.15	5.45	5.65	.....	.....	6.50	6.70	6.95	7.30	7.95	8.15	8.25	.....	.....
CAPITOL	Plain	qs13.90	qs13.65	.....	qs17.90	qs18.60	20.80	24.15	.....	c29.00	qs27.15	c27.95	29.15	c29.70	c33.70	c31.75	.....	.....	c39.75	c41.70	c42.35	c43.60	c47.70	cs53.15	c50.50	.....	.....
	Non-Skid	qs14.85	qs14.30	.....	qs18.35	qs19.70	21.75	25.80	.....	c30.20	qs28.50	c29.20	30.40	c31.25	c35.35	c33.10	.....	.....	c42.00	c43.55	c44.45	c36.05	c50.05	cs56.55	c52.95	.....	.....
	Redman Tubes	3.50	3.40	3.80	4.20	4.25	4.35	4.65	4.95	5.35	5.50	5.60	5.85	6.10	6.25	6.35	.....	.....	7.30	7.40	7.50	7.75	8.90	9.20	9.00	.....	.....
	Paragum Gray Tubes	3.10	3.05	3.50	3.55	3.85	3.95	4.55	4.70	4.95	4.75	4.85	5.00	5.20	5.70	5.45	.....	.....	6.45	6.55	6.70	7.00	8.00	8.50	8.20	.....	.....
CARLISLE	Lightning Tread	.....	.....	.....	.....	.....	qc38.50	.....	.....	.....	.....	qc48.75	c50.25	qc51.50	.....	.....	c55.00	qc56.50	c58.00	c59.25	c60.75	.....	c72.00	.....	c75.50	.....	cs91.50
CARSPRING	Plain	qs18.20	qs19.55	.....	s25.30	.....	29.15	36.30	.....	qs36.75	s35.20	36.00	37.70	38.50	44.55	41.00	.....	.....	51.40	53.70	54.45	56.65	62.50	s69.85	66.25	s102.85	s105.60
	"C" Tread	.....	qs20.45	.....	s26.50	.....	30.55	38.25	.....	qs38.50	s36.95	37.75	39.60	40.50	46.75	43.15	.....	.....	53.90	56.25	57.15	59.50	65.70	s73.70	69.55	s108.35	s111.00
	Suction Tread	.....	.....	.....	s29.75	.....	34.25	42.90	.....	qs42.70	s41.40	42.30	44.25	45.35	52.25	48.20	.....	.....	60.35	63.00	64.10	66.75	73.50	s82.50	77.80	s121.00	s124.30
	Red Tubes	3.60	3.70	.....	4.50	.....	4.70	5.60	.....	6.25	6.00	6.10	6.40	6.50	7.30	6.80	.....	.....	7.60	7.75	7.90	8.05	8.95	10.10	9.35	11.00	11.20
	Gray Tubes	3.25	3.35	.....	4.00	.....	4.25	4.50	.....	5.10	4.75	4.95	5.10	5.20	5.85	5.50	.....	.....	6.55	6.65	6.75	6.85	7.90	8.90	8.20	9.65	9.80
CENTURY-PLAINFIELD	Plain	.....	.....	.....	q26.00	qs27.50	30.50	.....	.....	.....	s36.00	38.00	39.00	40.00	.....	43.75	s48.00	qc47.25	49.00	50.35	54.15	55.00	61.75	64.50	65.70	.....	s87.00
	Non-Skid	.....	qs22.00	.....	28.00	29.00	32.00	.....	.....	.....	s38.00	40.00	41.00	42.00	.....	46.00	s50.50	qc49.75	51.50	53.00	57.00	58.00	65.00	68.00	69.00	s86.00	s91.00
	Superbar	.....	16.30	.....	qs21.50	qs22.50	c21.85	.....	.....	.....	qs28.00	c28.60	c29.85	c30.65	c35.00	.....	.....	.....	c41.30	c43.10	43.90	.....	49.20	55.70	52.15	.....	.....
	Tubes	3.45	3.55	3.80	4.55	4.70	4.90	5.25	5.55	5.65	5.75	5.85	6.10	6.30	6.35	6.55	7.35	.....	7.90	8.05	8.35	8.60	9.45	9.65	10.00	.....	11.65
CHAMPION*	Non-Skid	14.45	14.10	.....	18.25	.....	21.40	23.80	.....	.....	28.00	28.60	29.85	30.65	.....	35.90	.....	39.95	41.30	43.10	43.90	50.20	49.25	55.70	52.15	.....	.....
	Champion Gray Tubes	3.10	3.05	.....	3.75	3.80	3.85	4.55	.....	.....	4.75	4.85	5.00	5.15	5.80	6.00	.....	6.15	6.25	6.45	6.65	7.60	7.80	8.60	8.10	.....	.....
CHESTER	Plain	s13.50	s14.00	s18.25	s17.90	s19.55	21.10	23.80	s30.00	s31.90	s27.85	28.35	30.00	30.45	s31.65	s37.90	.....	.....	s41.75	43.25	43.95	s53.75	50.90	s51.75	53.65	.....	.....
	Non-Skid	s15.15	s15.70	s20.75	s19.95	s21.35	23.60	26.95	s34.20	s37.50	s31.50	32.05	33.90	34.50	s36.30	s43.40	.....	.....	s46.75	48.60	49.15	s60.00	59.95	s61.05	63.10	.....	.....
	Red Tubes	3.30	3.40	3.80	4.15	4.25	4.40	4.65	5.20	5.60	5.50	5.65	5.90	6.15	6.30	6.60	.....	.....	7.30	7.45	7.70	8.30	8.65	8.85	9.00	.....	.....
	Gray Tubes	2.85	2.90	3.35	3.45	3.60	3.75	4.10	4.50	4.90	4.70	4.85	5.05	5.15	5.45	5.65	.....	.....	6.50	6.70	6.95	7.30	7.95	8.15	8.25	.....	.....
CLEVELAND-STANDARD	Plain	18.00	18.60	.....	23.00	24.40	25.60	29.00	.....	31.00	31.40	32.40	34.00	35.00	36.00	37.00	.....	.....	43.60	44.40	45.60	46.80	53.00	54.60	56.00	.....	80.00
	Non-Skid	19.00	20.80	.....	27.20	29.00	31.60	33.00	.....	35.60	36.40	37.20	38.00	39.00	40.20	41.40	.....	.....	47.20	48.40	51.00	52.80	58.40	61.60	63.40	.....	88.00
	Red Tubes	3.60	3.80	4.00	4.40	4.55	4.65	4.95	5.15	5.70	5.85	6.10	6.30	6.50	6.70	6.90	.....	.....	8.00	8.20	8.40	8.65	9.55	9.70	9.90	.....	10.70
	Gray Tubes	3.20	3.35	3.55	3.90	4.05	4.15	4.40	4.50	5.15	5.30	5.50	5.65	5.80	6.10	6.20	.....	.....	7.15	7.35	7.55	7.75	8.50	8.70	8.90	.....	9.70
COLUMBIA	Plain	13.80	14.20	17.30	18.45	19.45	21.50	27.90	.....	29.85	28.25	28.80	30.10	30.80	37.20	32.85	.....	.....	41.60	43.45	44.15	45.90	49.55	57.85	52.55	.....	.....
	Non-Skid	14.50	14.95	.....	19.35	20.35	22.45	29.25	.....	.....	29.65	30.20	31.65	32.40	39.00	34.50	.....	.....	43.65	45.65	46.35	48.25	52.05	60.75	55.20	.....	.....
	Gray Tubes	2.95	3.00	3.40	3.75	3.80	3.85	4.55	.....	4.95	4.75	4.85	5.00	5.15	5.75	5.50	.....	.....	6.25	6.45	6.65	6.85	7.80	8.60	8.10	.....	.....
	Red Tubes	3.30	3.35	3.80	4.20	4.25	4.30	5.05	.....	5.50	5.30	5.40	5.55	5.70	6.45	6.10	.....	.....	7.00	7.15	7.35	7.65	8.70	9.50	8.95	.....	.....
COMBINATION	Plain	qs12.75	qs13.70	.....	qs17.85	qs18.85	20.55	q23.25	.....	.....	qs27.35	27.85	29.20	29.85	31.30	31.80	39.20	.....	39.75	41.50	42.20	51.60	s46.40	47.15	49.10	.....	cs70.25
	Hold-on Non-Skid	qs15.05	qs16.05	.....	qs20.55	qs21.55	23.70	q26.85	.....	.....	qs31.35	32.00	33.65	34.26	35.90	36.25	44.15	.....	46.75	48.85	49.60	51.60	s57.25	58.10	60.60	.....	cs84.30
	Gray Tubes	3.00	3.15	.....	3.75	3.80	3.90	4.15	.....	.....	5.00	5.25	5.35	5.50	5.65	5.90	6.55	.....	6.75	6.95	7.15	7.25	8.15	8.40	8.55	.....	9.10
	Red Tubes	3.30	3.45	.....	4.15	4.20	4.35	4.65	.....	.....	5.50	5.85	5.95	6.10	6.20	6.50	7.20	.....	7.50	7.75	8.00	8.10	9.15	9.30	9.45	.....	10.05
COMPRESSION	Patented Tube	14.00	15.00	.....	16.00	17.00	18.00	19.00	.....	.....	20.00	21.00	22.00	23.00	24.00	25.00	.....	26.00	27.00	28.00	29.00	30.00	32.00	33.00	34.00	.....	.....
CONVERSE TRIPLE TREAD*	Plain	.....	s20.20	.....	s26.00	s28.65	30.25	.....	.....	.....	35.00	36.30	37.60	38.95	40.10	41.40	qc45.00	qc46.40	47.85	49.40	50.70	52.10	58.70	60.60	62.15	.....	.....
	Non-Skid	.....	.....	.....	27.50	32.90	36.10	.....	.....	.....	43.05	44.40	45.95	47.60	48.80	50.15	52.45	54.05	55.65	58.60	63.00	64.80	72.00	74.85	77.35	.....	.....
	Gray Tubes	.....	3.30	3.75	4.00	4.10	4.20	4.60	.....	.....	5.30	5.45	5.70	5.90	6.00	6.25	.....	.....	7.00	7.40	7.75	7.80	8.80	8.85	9.00	9.35	9.75
	Red Tubes	.....	3.75	4.05	4.45	4.65	4.70	4.95	.....	.....	5.85	6.00	6.30	6.55	6.70	6.90	.....	.....	8.00	8.15	8.50	8.70	9.80	10.00	10.15	10.40	10.80
CORTLAND	C. C. Plain	.....	s12.20	.....	s15.85	.....	18.55	s21.00	.....	.....	s24.30	34.75	25.95	26.50	s28.00	s28.25	s33.50	s39.60	35.70	37.35	37.95	s39.50	42.65	s44.10	45.15	s60.00	s61.00
	C. C. Non-Skid	.....	s12.80	.....	s16.60	.....	19.45	s22.10	.....	.....	s25.45	26.00	27.15	27.85	s29.00	s29.65	s35.00	s36.30	37.55	39.20	39.90	s41.45	44.75	s46.15	47.40	s62.50	s64.00
	Regular Plain	.....	s17.75	.....	s22.25	.....	25.00	s28.00	.....	.....	s39.25	31.50	32.50	33.50	s34.50	s35.50	s40.50	s41.50	43.00	45.00	46.00	s48.50	55.50	s57.00	59.75	s77.00	s80.00
	Gripper Non-Skid	.....	s20.40	.....	s25.00	.....	28.75	s31.00	.....	.....	s37.00	39.00	40.00	41.00	s42.00	s43.00	s47.00	s48.00	49.00	51.75	55.50	s58.00	65.75	s67.50	69.50	s87.00	s89.00
CUPPLES	Rough Tread	.....	qs18.00	.....	qs24.75	.....	qc30.00	.....	.....	.....	qs39.75	qc40.75	qc43.00	c44.00	.....	.....	.....	qc54.75	qc55.50	qc57.00	c58.25	.....	c68.25	.....	cs71.75	.....	.....
	Red Tubes	.....	3.95	.....	4.75	.....	4.95	.....	.....	.....	6.40	6.60	6.75	6.95	.....	.....	.....	8.40	8.65	8.80	8.95	.....	10.50	.....	10.95	.....	.....
	Rhinos Inner Tubes	.....	7.90	.....	9.50	.....	9.90	.....	.....	.....	12.80	13.20	13.50	13.90	.....	.....	.....	16.80	17.30	17.60	17.90	.....	21.00	.....	21.90	.....	.....
CURTIS	Plain	18.20	18.50	.....	24.70	.....	27.60	.....	.....	.....	32.25	33.45	34.65	35.85	.....	38.10	.....	.....	44.15	45.50	46.75	48.00	54.30	55.80	57.30	.....	.....
	Suction	20.70	20.90	.....	27.25	.....	33.00	.....	.....	.....	39.75	41.15	42.35	43.90	.....	46.20	.....	.....	51.30	52.90	57.40	59.10	65.25	66.60	71.30	.....	.....
	Gray Tubes	3.35	3.45	.....	4.00	.....	4.15	.....	.....	.....	5.40	5.65	5.80	5.90	.....	6.15	.....	.....	7.35	7.55	7.75	8.00	9.00	9.30	9.40	.....	.....
	Red Tubes	3.65	3.85	.....	4.45	.....	4.55	.....	.....	.....	6.05	6.20	6.45	6.55	.....	6.80	.....	.....	8.15	8.30	8.65	8.80	9.90	10.20	10.30	.....	.....
DAYTON	Plain	qs19.55	qs18.70	.....	qe22.80	qs25.25	26.80	.....	.....	s40.35	qs31.35	qs32.55	33.75	34.90	s35.95	37.10	s50.45	.....	43.05	44.30	45.65	46.70	s52.95	s54.45	55.80	.....	s83.70
	Non-Skid	qs23.75	22.35	.....	qs27.80	qs28.90	32.05	.....	.....	.....	qs38.70	qs40.00	41.15	42.60	s44.05	46.50	.....	.....	49.95	52.95	57.50	58.70	s65.45	s67.95	69.55	s86.55	s100.75
	Red Tubes	3.45	3.55	.....	4.55	4.70	4.90	.....	.....	5.65	5.80	5.90	6.10	6.30	6.40	6.55	7.40	.....	7.90	8.05	8.35	8.60	9.45	9.65	10.00	11.45	11.65
DEFIANCE	Plain	qs13.00	qs13.15	.....	17.45	s17.70	21.30	22.55	.....	.....	s26.95	27.70	28.55	29.15	29.95	31.10	.....	.....	39.05	41.50	42.00	.....	.....	cs47.85	c49.65	.....	.....
	Tiger Tread	qs14.35	qs14.60	.....	19.20	s19.80	22.85	25.05	.....	.....	s29.05	31.08	31.55	32.85	33.28	33.70	.....	.....	42.25	45.70	47.25	.....	.....	cs51.15	c54.45	.....	.....
	Gray Tubes	3.05	3.10	.....	3.65	3.75	3.90	4.35	.....	.....	4.90	5.05	5.25	5.40	5.70	5.75	.....	.....	6.65	6.80	7.05	.....	.....	8.50	8.45	.....	.....
	Red Tubes	3.15	3.45	.....	3.90	3.95	4.00	4.50	.....	4.95	5.00	5.40	5.55	5.70	5.85	6.10	.....	.....	7.00	7.25	7.40	7.65	.....	8.20	8.30	.....	.....
	Double Wall Tubes	4.13	4.20	.....	4.97	5.11	5.32	5.88	.....	.....	6.65	6.86	7.14	7.35	7.77	7.70	.....	.....	9.03	9.24	9.59	9.85	.....	11.55	11.48	.....	.....

Digitized by Google

TIRES AND TUBES—Continued

Name	Trade Name and Tread	28x3	30x3	32x3	30x3½	31x3½	32x3½	34x3½	36x3½	30x4	31x4	32x4	33x4	34x4	35x4	36x4	32x4½	33x4½	34x4½	35x4½	36x4½	37x4½	35x5	36x5	37x5	37x5½	38x5¼
DELION	Plain	16.10	18.00	19.40	22.80	24.15	26.45	28.00	33.15	35.55	31.15	33.15	35.45	37.45	38.35	40.35	46.90	48.00	50.75	51.37	51.90	53.45	59.90	61.20	62.85	80.95	83.80
	Non-Skid	18.00	19.35	21.00	26.45	27.60	29.00	29.75	39.25	40.00	35.20	36.85	39.65	40.95	42.90	44.05	52.25	53.35	54.30	55.55	57.25	59.60	65.70	67.60	70.25	89.35	92.65
	Red Tubes	3.50	3.50	3.90	4.15	4.45	4.55	4.85	5.10	6.10	5.60	5.80	6.10	6.25	6.40	6.60	7.40	7.50	7.60	7.75	8.00	8.20	9.00	9.25	9.45	10.25	10.50
DIAMOND	Smooth	14.50	14.10	18.90	18.35	19.30	21.45	25.05	26.65	29.85	28.15	28.70	30.05	30.70	35.05	36.00	38.95	40.05	41.30	43.25	43.95	50.30	49.35	55.90	52.25	78.45	70.85
	Squeegee	15.20	14.85	19.80	19.20	20.30	22.50	26.25	27.90	31.25	29.45	30.10	31.40	32.25	36.85	37.80	40.95	42.05	43.45	45.35	46.20	52.85	51.85	58.65	54.90	82.30	74.40
	Gray Tubes	3.25	3.20	3.60	3.95	4.00	4.05	4.80	5.05	5.20	5.00	5.10	5.25	5.40	6.10	6.30	6.25	6.45	6.60	6.80	7.00	8.00	8.20	9.05	8.55	9.75	9.95
	Brown Tubes	3.55	3.50	4.00	4.40	4.45	4.50	5.30	5.65	5.80	5.60	5.70	5.85	6.00	6.80	6.95	6.95	7.15	7.35	7.50	7.75	8.80	9.15	10.00	9.40	10.85	11.05
DOUBLE FABRIC	Xtra-Ply	16.35	qs17.45	.....	qs22.65	qs24.40	c26.70	.....	.....	.....	qs32.90	qc35.50	c37.30	c38.10	.....	c40.55	.....	.....	c48.15	c49.90	c51.50	c53.95	c63.20	.....	c66.85	.....	.....
	Duo-Cord	.....	qs21.45	.....	qs27.95	.....	c32.10	.....	.....	.....	.....	qc43.35	c44.70	c46.05	.....	.....	c54.35	c56.05	c57.85	.....	.....	.....	c71.75	.....	c75.80	.....	.....
	Brazil Gray Tubes	3.15	3.35	.....	3.80	3.85	4.05	4.15	4.35	.....	5.15	5.35	5.45	5.55	5.80	5.90	6.85	6.95	7.05	7.15	7.25	7.35	8.55	8.65	8.85	9.35	.....
DREADNAUGHT	Vacuum Red	.....	qs17.95	.....	qs22.55	qs23.75	c28.50	.....	.....	.....	qs34.70	c35.30	c37.10	c37.90	.....	cs39.95	.....	qc48.55	c49.20	c51.45	c52.25	cs54.65	c60.05	cs61.25	c63.50	.....	.....
	Ribbed Tread	.....	qs15.25	.....	qs19.75	qs21.00	c25.15	.....	.....	.....	qs30.20	c31.35	c32.55	c32.95	.....	cs36.20	.....	qc42.65	c43.85	c45.80	c46.55	cs48.95	c51.25	cs52.00	c54.30	.....	.....
	Super-Dreadnaught Red Tubes	.....	3.40	.....	4.15	4.25	4.40	4.65	.....	.....	5.50	5.65	5.90	6.15	6.30	6.45	.....	7.15	7.30	7.45	7.70	7.85	8.65	8.85	9.00	10.45	10.80
DRY CLIMATE	Plain	.....	13.05	.....	16.60	17.80	21.10	22.00	.....	.....	25.85	26.40	27.70	28.35	29.65	30.10	.....	.....	37.60	39.35	39.95	41.65	46.15	46.85	48.90	.....	.....
	Non-Skid	.....	.....	.....	19.40	20.90	23.10	25.75	.....	.....	30.25	30.90	32.45	33.15	34.65	35.20	41.30	42.65	44.00	46.00	46.70	48.75	57.70	58.50	61.10	.....	.....
	Red Tubes	.....	3.95	4.10	4.50	4.60	4.95	5.35	5.60	5.75	6.40	6.60	6.75	6.95	7.05	7.20	8.40	8.50	8.65	8.80	8.95	9.25	10.50	10.75	10.95	.....	.....
	Gray Tubes	.....	3.05	3.15	3.45	3.65	3.80	4.45	4.50	4.55	4.90	5.05	5.25	5.35	5.45	5.55	6.50	6.60	6.65	6.75	6.90	7.10	8.10	8.25	8.40	.....	.....
DUNLOP	Cross Groove	.....	22.95	.....	28.55	30.20	32.15	34.60	36.50	.....	38.55	42.10	44.30	46.40	48.60	51.30	52.35	53.35	54.35	57.70	58.30	60.40	64.35	67.05	69.70	78.50	.....
	Traction Non-Skid	.....	25.00	.....	33.80	35.55	36.75	39.40	42.50	.....	46.25	50.10	53.05	55.50	57.70	59.55	60.15	62.25	64.35	66.45	68.65	70.75	79.50	83.00	84.40	92.35	97.90
	Tubes	4.80	4.85	.....	6.15	6.25	6.40	7.20	7.50	.....	7.70	8.00	8.25	8.55	9.05	9.05	10.45	10.45	10.70	10.95	11.20	11.50	12.90	13.35	13.35	14.75	15.15
DUPLEX	Plain	13.65	14.55	15.60	18.95	19.55	19.55	21.95	.....	29.70	30.90	30.90	31.95	34.20	35.25	36.35	42.60	44.05	45.45	46.95	48.40	49.75	56.90	58.50	60.15	70.35	72.15
	Non-Skid	19.45	21.00	22.75	27.85	28.85	29.40	30.35	.....	38.40	39.55	41.25	42.70	44.05	46.70	46.15	52.95	53.05	54.70	56.45	58.05	59.75	67.20	68.50	69.60	89.25	92.50
	Red Tubes	3.60	3.85	4.10	5.15	5.30	5.45	5.75	.....	7.25	7.60	7.75	8.05	8.20	8.50	8.70	9.65	9.80	10.05	10.35	10.60	11.00	12.25	12.50	12.95	14.55	14.90
DURAL	Red Tubes	3.65	3.75	.....	4.55	4.70	4.85	5.10	.....	.....	6.05	6.20	6.50	6.75	6.95	7.10	.....	7.85	8.05	8.25	8.45	8.65	9.50	9.75	9.90	.....	.....
	Gray Tubes	2.80	2.85	.....	3.40	3.55	3.70	3.90	.....	.....	4.55	4.80	5.00	5.15	5.30	5.40	.....	6.30	6.40	6.60	6.85	7.00	7.60	7.80	8.05	.....	.....
EHMAN	Plain	13.80	13.40	.....	17.45	18.35	20.40	23.80	.....	.....	26.75	27.25	28.55	29.15	33.30	34.20	.....	38.05	39.25	41.10	41.75	47.80	46.90	53.10	49.65	.....	.....
	Track Tread	14.45	14.10	.....	18.25	19.30	21.40	24.95	.....	.....	28.00	28.60	29.85	30.65	35.00	35.90	.....	39.95	41.30	43.10	43.90	50.20	49.25	55.70	52.15	.....	.....
	Non-Skid Worm Drive Tread	14.45	14.10	.....	18.25	19.30	21.40	24.95	.....	.....	28.00	28.60	29.85	30.65	35.00	35.90	.....	39.95	41.30	43.10	43.90	50.20	49.25	55.70	52.15	.....	.....
	Non-Skid Wrapped Tread	15.15	14.80	.....	19.15	20.25	22.47	26.20	.....	.....	29.40	30.05	31.35	32.20	36.75	37.70	.....	41.95	43.35	45.25	46.10	52.70	51.70	58.50	54.75	.....	.....
	Gray Tubes	3.10	3.05	.....	3.75	3.80	3.85	4.55	.....	.....	4.75	4.85	5.00	5.15	5.80	6.00	.....	6.15	6.25	6.45	6.65	7.60	7.80	8.60	8.10	.....	.....
	Red Tubes	3.40	3.35	.....	4.20	4.25	4.30	5.05	.....	.....	5.30	5.40	5.55	5.70	6.45	6.60	.....	6.80	7.00	7.15	7.35	8.35	8.70	9.50	8.95	.....	.....
EMPIRE	Smooth Gray	qs15.20	qs16.10	.....	20.40	qs21.25	23.55	26.25	27.55	.....	31.45	32.05	33.45	34.00	35.45	35.70	.....	46.20	46.55	48.50	49.05	50.80	57.90	58.50	60.80*	.....	.....
	Non-Skid Gray	qs16.00	qs16.95	.....	21.45	qs22.40	24.80	27.60	29.00	.....	33.10	33.70	35.20	35.80	37.30	37.55	48.75	48.60	49.00	51.05	51.65	53.45	60.95	61.60	64.00	.....	.....
	Gray Tubes	3.00	3.15	3.30	3.60	3.70	3.75	3.90	4.10	4.80	4.90	5.05	5.15	5.30	5.45	5.60	6.45	6.60	6.65	6.75	6.85	7.05	8.10	8.20	8.40	9.00	9.15
	Smooth Red	qs17.95	qs19.05	.....	24.90	qs26.10	28.55	32.45	34.10	.....	38.00	38.70	40.70	41.65	43.55	44.20	.....	56.50	55.55	57.95	60.10	61.30	64.75	65.70	68.60	.....	.....
	Non-Skid Red	qs18.75	qs20.00	.....	26.10	qs27.50	30.10	34.10	35.95	.....	40.00	40.80	42.85	43.70	45.85	46.60	58.20	59.45	58.45	61.00	63.35	64.55	68.20	69.20	72.20	.....	.....
	Red Tubes	3.45	3.65	3.85	4.05	4.20	4.20	4.65	5.15	5.35	5.55	5.65	5.90	6.05	6.20	6.40	7.65	7.80	7.90	8.15	8.35	8.50	9.50	10.00	10.10	10.95	11.10
ENDURANCE	Ball Bearing Non-Skid	.....	qs16.75	.....	qs21.75	.....	qc25.00	.....	.....	.....	s33.00	qc34.00	c36.25	c38.00	.....	.....	.....	*qc	qc47.25	qc49.50	c50.50	.....	c56.50	*cs	c59.50	.....	.....
	Gray Tubes	3.45	3.60	3.85	4.05	4.20	4.25	4.60	4.80	5.50	5.50	5.60	5.70	5.95	6.15	6.15	7.30	7.30	7.35	7.55	7.70	7.85	9.10	9.30	9.30	10.50	10.65
	Red Tubes	3.85	3.90	4.35	4.90	5.00	5.10	5.75	6.00	6.15	6.15	6.40	6.60	6.80	7.25	7.25	8.35	8.35	8.55	8.75	8.95	9.20	10.30	10.65	10.65	11.75	12.10
	Durable Gray Tubes	3.10	3.20	3.45	3.65	3.75	3.80	4.15	4.30	4.90	4.90	5.10	5.20	5.35	5.55	5.55	6.60	6.60	6.65	6.75	6.90	7.10	8.10	8.40	8.40	9.40	9.55
	Durable Red Tubes	3.45	3.60	3.85	4.05	4.20	4.25	4.60	4.80	5.50	5.50	5.60	5.70	5.95	6.15	6.15	7.30	7.30	7.35	7.55	7.70	7.85	9.10	9.30	9.30	10.50	10.65
FALLS	Plain	22.50	23.60	.....	30.70	32.10	33.00	35.90	.....	.....	42.60	45.70	47.25	49.00	50.20	51.80	55.60	.....	59.10	60.20	62.50	64.45	75.45	77.05	78.60	.....	.....
	Ribbed and Neverslip Non-Skid	24.00	25.30	.....	32.80	34.40	35.30	38.50	.....	.....	45.40	48.90	50.25	51.85	53.25	54.85	58.30	60.50	62.50	63.80	44.70	68.00	79.65	81.30	82.90	98.50	99.50
	Extra Heavy Red Tubes	4.80	5.00	.....	6.80	7.05	7.20	7.50	.....	.....	8.95	9.20	9.45	9.70	9.90	10.20	11.25	11.50	11.85	12.15	12.45	12.75	13.95	14.30	14.55	16.40	17.10
FEDERAL	Plain	qs14.30	qs13.90	.....	qs18.05	qs19.10	s21.10	qc24.70	.....	.....	qs27.65	qc28.20	c29.60	c30.20	qc34.45	c32.20	.....	qc39.40	c40.65	c42.50	c43.20	c44.95	c48.50	.....	c51.45	.....	.....
	Traffik Tread	qs14.95	qs14.60	.....	qs18.90	qs20.00	s22.15	qc25.85	.....	.....	qs29.00	qc29.65	c30.90	c31.70	qc36.20	c33.80	.....	qc41.30	qc42.80	qc44.65	qc45.40	qc47.20	qc50.95	.....	c53.95	.....	.....
	Rugged Tread	qs16.85	qs16.40	.....	qs21.30	.....	s24.90	qc29.06	.....	.....	qs32.60	qc33.35	c34.75	c35.70	qc40.70	c38.00	.....	qc46.50	c48.15	c50.20	c51.05	c53.15	c57.30	.....	c60.70	.....	.....
	Gray Tubes	3.10	3.05	.....	3.75	3.80	3.95	4.70	.....	.....	4.85	5.05	5.05	5.30	5.65	5.65	.....	6.35	6.55	6.55	6.80	7.05	8.00	8.30	8.30	.....	.....
	Red Skin Tubes	3.70	3.45	.....	4.35	4.40	4.55	5.45	.....	.....	5.55	5.80	5.80	6.10	6.55	6.55	.....	7.25	7.50	7.50	7.85	8.10	9.20	9.50	9.50	.....	.....
FIRESTONE	Round Tread	13.50	14.00	18.25	17.90	19.55	21.10	23.80	30.00	31.90	27.85	28.35	30.00	30.45	31.65	37.90	39.80	40.85	41.75	43.25	43.95	53.75	50.90	51.75	53.65	83.20	89.25
	Non-Skid	15.15	15.70	20.75	19.95	21.35	23.60	26.95	34.20	37.50	31.50	32.05	33.90	34.50	36.30	43.40	44.55	46.35	46.75	48.60	49.15	60.00	59.95	61.05	63.10	95.30	101.35
	Gray Tubes	2.85	2.90	3.35	3.45	3.60	3.75	4.10	4.50	4.90	4.70	4.85	5.05	5.15	5.45	5.65	6.30	6.40	6.50	6.70	6.95	7.30	7.95	8.15	8.25	9.20	9.45
	Red Tubes	3.30	3.40	3.80	4.15	4.25	4.40	4.65	5.20	5.60	5.50	5.65	5.90	6.15	6.30	6.60	7.00	7.15	7.30	7.45	7.70	8.30	8.65	8.85	9.00	10.45	10.80
	Triple Tread	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	c47.85	c49.10	c50.45	.....	.....	c53.90	c55.30	c56.75	c58.15	c59.50	.....	c70.60	.....	c73.90	.....	.....
	F F Tread	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	c51.40	52.75	c54.20	.....	.....	c57.85	c59.40	c60.95	c62.40	c63.95	.....	c75.80	.....	c79.45	.....	.....
	Super Size Red Tubes	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	7.15	7.30	7.45	.....	.....	8.30	8.45	8.65	8.85	9.00	.....	10.25	.....	10.80	.....	.....
FISK	Plain	qs13.80	qs13.40	qs17.90	17.45	qs18.85	20.40	23.80	s26.10	s32.30	s26.75	27.20	28.55	29.15	33.30	37.60	qc.....	qc38.05	39.30	41.10	41.75	c50.15	c46.90	53.10	49.65	cs74.50	.....
	Gray and Black Non-Skid	qs14.50	qs14.10	.....	18.30	qs19.30	21.40	25.00	.....	s33.95	s28.00	28.60	29.85	30.65	35.00	39.45	qc38.50	qc39.95	41.30	43.10	43.90	c52.65	c49.20	55.70	52.10	cs78.20	cs70.65
	Red Non-Skid	.....	qs18.30	.....	22.90	qs24.15	26.75	.....	.....	.....	s33.65	34.40	35.85	36.75	.....	47.35	qc46.15	qc47.90	49.60	51.80	52.60	c63.30	c59.10	66.90	62.50	.....	cs84.80
	Gray Tubes	3.10	3.05	3.40	3.75	3.80	3.85	4.55	4.80	4.75	4.75	4.95	4.95	5.15	5.50	5.50	6.15	6.15	6.40	6.40	6.65	6.90	7.80	8.10	8.10	9.25	9.45
	Red Tubes	.....	3.45	.....	4.30	.....	4.40	5.20	.....	5.45	5.45	5.70	5.70	5.95	6.35	6.35	7.10	7.10	7.30	7.30	7.65	7.90	8.95	9.30	9.30	.....	10.90
G & J	Plain	13.25	13.80	.....	17.95	18.85	20.80	27.15	.....	.....	27.45	28.00	29.30	30.05	36.20	31.90	.....	.....	40.45	42.25	42.90	44.65	48.20	56.25	51.10	.....	.....
	Non-Skid	15.85	14.50	.....	18.80	19.80	21.85	28.45	.....	.....	28.80	29.35	30.80	31.50	38.00	33.50	.....	.....	42.45	44.35	45.05	46.85	50.60	59.05	53.70	.....	.....
	Gray Tubes	2.85	3.00	.....	3.75	3.85	4.00	4.30	.....	.....	4.85	5.00	5.15	5.25	5.45	5.65	.....	.....	6.45	6.60	6.85	7.10	8.00	8.15	8.30	.....	.....
	Red Tubes	3.65	3.75	.....	4.65	4.80	4.90	5.35	.....	.....	6.00	6.05	6.15	6.25	6.55	6.65	.....	.....	8.10	8.25	8.40	8.50	9.65	9.90	10.10	.....	.....

*Price to be announced later.

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Name	Trade Name and Tread	28x3	30x3	32x3	30x3½	31x3½	32x3½	34x3½	36x3½	30x4	31x4	32x4	33x4	34x4	35x4	36x4	32x4½	33x4½	34x4½	35x4½	36x4½	37x4½	35x5	36x5	37x5	37x5½	38x5½
GENERAL	Plain	.....	16.90	.....	21.05	.....	26.20	29.45	.....	.....	34.20	34.70	36.80	37.45	38.85	39.40	.....	.....	46.10	48.30	50.25	53.45	59.40	61.00	61.30	.....	.....
	Non-Skid	18.35	19.55	.....	24.75	26.70	29.45	33.65	.....	.....	38.65	39.40	41.65	42.40	44.60	45.30	.....	52.20	53.65	56.45	57.25	59.70	66.70	69.45	70.40	.....	.....
	Gray Tubes	3.05	3.10	3.55	3.70	3.90	4.05	4.30	.....	.....	5.00	5.25	5.45	5.60	5.80	5.90	.....	6.90	7.00	7.20	7.55	7.70	8.30	8.50	8.75	.....	10.20
	Red Tubes	3.85	4.00	4.60	4.85	4.90	5.10	5.40	.....	.....	5.40	6.60	6.90	7.00	7.35	7.50	.....	8.35	8.50	8.70	9.00	9.20	10.25	10.30	10.55	.....	12.55
	Rib Tread	.....	.....	.....	.....	.....	qc37.60	.....	.....	.....	.....	qc47.85	qc49.10	qc50.45	.....	.....	.....	qc55.30	qc56.75	qc58.15	c59.50	.....	c70.60	.....	c73.90	.....	.....
	Non-Skid	.....	.....	.....	.....	.....	qc40.45	.....	.....	.....	.....	qc51.40	qc52.75	qc54.20	.....	.....	.....	qc59.40	qc60.95	qc62.40	c63.95	.....	c75.80	.....	c79.45	.....	.....
GILLETTE SAFETY	Plain	14.90	13.85	.....	17.95	.....	21.10	.....	.....	.....	28.20	28.70	30.05	30.50	.....	32.25	.....	.....	41.40	43.30	43.95	.....	50.70	56.25	52.35	.....	.....
	Ribbed	.....	15.60	.....	21.35	.....	24.10	.....	.....	.....	31.50	32.05	33.90	34.50	.....	36.90	.....	.....	46.80	48.65	49.20	.....	57.85	57.85	61.05	.....	.....
	5,000-Mile Non-Skid	18.35	19.50	.....	24.75	.....	29.45	.....	.....	.....	38.65	39.40	41.65	42.40	.....	45.30	.....	.....	56.20	59.15	60.00	.....	71.25	72.75	73.75	.....	.....
	Plain Cord	.....	.....	.....	35.20	.....	37.60	.....	.....	.....	46.20	47.85	49.10	50.45	.....	.....	53.90	55.30	56.75	58.15	59.50	.....	70.60	.....	73.90	.....	.....
	Non-Skid Cord	.....	.....	.....	39.65	.....	42.35	.....	.....	.....	52.05	53.85	55.30	56.75	.....	.....	60.65	62.20	63.85	65.40	67.00	.....	79.40	.....	83.20	.....	.....
	Gray Tubes	2.75	3.00	.....	3.75	.....	4.00	4.30	.....	.....	4.85	5.00	5.15	5.25	5.45	5.65	.....	.....	6.45	6.60	6.85	.....	8.00	8.15	8.30	.....	.....
	Hard Service Red Tubes	.....	3.70	.....	4.65	.....	4.90	5.35	.....	.....	6.00	6.05	6.15	6.30	6.55	6.55	.....	.....	8.10	8.25	8.40	.....	9.65	9.90	10.00	.....	.....
GLOBE	Plain	19.90	s19.55	24.65	25.45	s28.15	28.95	31.50	.....	36.40	34.50	34.90	36.60	38.35	38.75	39.60	43.75	qc45.60	47.25	48.70	50.10	51.50	57.80	59.70	61.10	79.50	81.10
	Good Grip Non-Skid	22.35	s22.25	27.35	28.15	s30.75	32.45	36.25	.....	40.10	38.10	38.75	40.45	41.20	42.90	43.25	47.50	qc50.80	53.05	56.15	59.55	61.60	66.50	67.85	72.60	90.65	97.25
	Red Tubes	3.50	3.65	3.95	4.25	4.45	4.50	4.75	.....	5.85	5.95	6.15	6.35	6.50	6.60	6.85	7.75	7.85	8.00	8.10	8.35	8.50	9.50	9.80	9.90	11.00	11.20
	Gray Tubes	3.05	3.25	3.50	3.85	3.95	4.00	4.20	.....	5.15	5.30	5.40	5.65	5.75	5.90	6.05	6.90	6.95	7.10	7.20	7.40	7.50	8.50	8.65	8.80	9.80	10.00
GOODRICH	Plain	13.80	13.40	17.95	17.45	18.35	20.40	23.80	25.30	28.35	26.75	27.25	28.55	29.15	33.30	34.20	37.00	38.05	39.25	41.10	41.75	47.80	46.90	53.10	49.65	74.55	67.30
	Safety Tread	14.45	14.10	18.80	18.25	19.30	21.40	24.95	26.50	29.70	28.00	28.60	29.85	30.65	35.00	35.90	38.90	39.95	41.30	43.10	43.90	50.20	49.25	55.70	52.15	78.20	70.70
	Gray Tubes	3.10	3.05	3.40	3.75	3.80	3.85	4.55	4.80	4.95	4.75	4.85	5.00	5.15	5.80	6.00	5.95	6.15	6.25	6.45	6.65	7.60	7.80	8.60	8.10	9.25	9.45
	Brown Tubes	3.40	3.35	3.80	4.20	4.25	4.30	5.05	5.35	5.50	5.30	5.40	5.55	5.70	6.45	6.60	6.60	6.80	7.00	7.15	7.35	8.35	8.70	9.50	8.95	10.30	10.50
	S. S. Silvertown Ribbed Tread	.....	.....	.....	.....	.....	37.60	.....	.....	.....	.....	47.85	49.10	50.45	.....	.....	53.90	55.30	56.75	58.15	59.50	.....	70.60	.....	73.90	.....	89.65
	Q. D. Silvertown Ribbed Tread	.....	.....	.....	.....	.....	39.35	.....	.....	.....	.....	50.05	51.35	52.75	.....	55.35	56.40	57.80	59.35	60.80	62.25	63.70	73.80	75.50	77.30	.....	93.70
	S. S. Silvertown Safety Tread	.....	.....	.....	.....	.....	39.50	.....	.....	.....	.....	50.25	51.60	53.00	.....	.....	56.65	58.10	59.60	61.05	62.50	.....	74.15	.....	77.60	.....	94.15
	Q. D. Silvertown Safety Tread	.....	.....	.....	.....	.....	41.30	.....	.....	.....	.....	52.60	53.95	55.40	.....	.....	59.25	60.70	62.30	.....	65.35	.....	77.50	.....	81.15	.....	98.40
GOODYEAR	Plain	.....	qs14.35	.....	q18.25	qs19.60	21.35	qc24.20	.....	.....	q28.45	c29.05	30.45	31.20	qc32.60	c33.10	qc38.85	qc40.05	41.35	c43.30	43.95	c45.80	c50.75	c51.55	c53.80	.....	.....
	All-Weather	.....	qs16.80	.....	q21.35	qs23.00	24.95	qc28.35	.....	.....	q33.30	c34.00	35.70	36.45	qc38.10	c38.70	qc45.45	qc46.90	48.40	c50.60	51.35	c53.65	c59.40	c60.30	c62.95	.....	.....
	Ribbed Tread Cord	.....	.....	.....	qc35.20	.....	qc37.60	qs40.05	.....	.....	qc46.20	qc47.85	qc49.10	qc50.45	.....	.....	qc53.90	qc55.30	c56.75	qc58.15	c59.50	.....	c70.60	.....	c73.90	.....	c89.65
	All-Weather Cord	.....	.....	.....	qc37.85	.....	qc40.45	qc43.05	.....	.....	qc49.65	qc51.40	qc52.75	qc54.20	.....	.....	qc57.90	qc59.40	c60.95	qc62.40	c63.95	.....	c75.80	.....	c79.45	.....	c96.30
	Unusual Sizes—Plain Tread	.....	.....	.....	.....	.....	.....	cs29.30	.....	.....	.....	qs34.90	.....	.....	cs39.15	cs39.75	.....	.....	.....	.....	.....	.....	.....	.....	qs64.55	qc83.10	.....
	All-Weather	.....	.....	.....	.....	.....	.....	cs34.30	.....	.....	.....	qs40.85	.....	.....	cs45.80	qs46.50	.....	.....	.....	.....	.....	.....	.....	.....	qs75.50	qc97.25	.....
	Regular Tubes	.....	3.05	.....	3.45	3.65	3.80	4.10	.....	.....	4.90	5.05	5.25	5.35	5.45	5.55	6.50	6.60	6.65	6.75	6.90	7.10	8.10	8.25	8.40	.....	.....
	Heavy Tourist Tubes	.....	3.95	.....	4.50	.....	4.95	5.35	.....	.....	6.40	6.60	6.75	6.95	.....	7.20	8.40	.....	8.65	8.80	8.95	9.25	10.50	10.75	10.95	11.70	11.90
GORDON	Lotraction Tread	.....	qs15.80	.....	qs20.20	.....	qc23.75	.....	.....	.....	qs31.30	qc31.95	qc33.50	qc34.30	.....	.....	.....	.....	.....	qc47.65	qc48.35	.....	qs56.85	.....	qs58.85	.....	.....
	Triangle Tread	qs15.60	qs16.75	.....	qs21.35	qs23.00	25.30	cs29.70	.....	.....	qs33.50	34.10	35.70	36.45	c38.10	39.75	.....	qc52.45	c48.40	49.95	50.50	c54.75	c57.70	cs58.50	61.10	.....	.....
	Gray Tubes	3.40	3.55	.....	4.05	4.30	4.45	4.80	.....	.....	5.75	5.95	6.10	6.25	6.35	6.50	.....	7.70	7.80	7.90	8.05	8.35	9.45	9.70	9.85	.....	.....
	Red Tubes	3.85	3.95	.....	4.50	4.75	4.95	5.35	.....	.....	6.40	6.60	6.75	6.95	7.05	7.20	.....	8.50	8.65	8.80	8.95	9.25	10.50	10.75	10.95	.....	.....
GRYPHON	Ribbed Skid	.....	s21.25	.....	s26.50	s27.50	30.50	.....	.....	.....	s36.75	38.00	39.25	40.50	42.00	44.50	.....	.....	47.75	50.75	55.25	56.50	63.00	65.50	67.00	.....	.....
	Non-Skid	.....	s22.25	.....	s28.00	s29.00	32.00	.....	.....	.....	s38.75	40.00	41.25	42.50	44.00	46.50	.....	.....	50.00	53.00	57.50	58.75	65.50	68.00	69.50	.....	.....
	Gray Tubes and Red Tubes	.....	3.50	.....	4.50	4.75	5.00	5.25	.....	.....	5.50	5.75	6.00	6.25	6.50	6.75	.....	7.50	7.75	8.00	8.25	8.50	9.25	9.50	9.75	.....	.....
HAMILTON	Cable Tread	s14.80	s15.85	.....	s20.50	s21.60	23.55	26.60	s28.20	s29.80	s31.50	32.10	33.70	34.35	36.10	36.70	38.30	s43.80	45.75	47.80	48.50	50.55	58.15	59.00	61.30	.....	77.90
	Pure Gum Tubes	2.85	2.90	.....	3.45	3.60	3.75	3.95	4.35	4.90	4.60	4.85	5.05	5.20	5.35	5.45	.....	.....	6.50	6.70	6.95	7.10	7.70	7.90	8.15	.....	9.45
	Perfection Pink Tubes	3.30	3.40	.....	4.15	4.25	4.40	4.65	4.95	5.60	5.50	5.65	5.90	6.15	6.30	6.45	.....	.....	7.30	7.45	7.70	7.85	8.65	8.85	9.00	.....	10.80
HARDMAN SENIOR	Plain	.....	s20.75	s24.00	s25.20	s27.90	29.70	34.00	.....	.....	s36.60	37.10	39.10	40.40	41.85	43.90	s47.75	49.40	51.35	53.25	55.25	57.75	63.10	s65.25	67.00	s86.35	s89.50
	Non-Skid	25.00	s23.50	s27.00	s28.00	s31.00	33.10	37.25	.....	.....	s40.00	41.15	43.50	44.90	47.15	48.85	s54.15	56.05	58.20	60.35	62.50	64.25	71.70	s74.80	76.00	s95.50	s99.50
	Red Tubes	.....	3.95	4.35	5.00	5.10	5.25	5.85	.....	.....	6.30	6.50	6.75	6.95	7.30	7.40	8.40	8.50	8.70	8.90	9.20	9.35	10.45	10.75	10.90	12.50	12.75
HARDMAN JUNIOR	Plain	.....	s15.50	s19.50	s20.35	s21.50	22.85	26.00	.....	.....	s27.75	29.50	31.40	32.45	34.90	36.50	s42.35	43.45	45.10	46.20	48.25	50.00	54.20	s56.00	58.00	.....	.....
	Non-Skid	18.00	s16.75	s22.00	s21.50	s22.50	24.15	29.40	.....	.....	s29.00	30.25	32.45	34.00	36.00	38.00	s44.00	45.00	46.75	47.85	49.50	51.60	56.00	s58.00	60.00	.....	.....
	Gray Tubes	.....	3.75	.....	4.30	4.40	4.50	4.85	.....	.....	5.75	5.85	6.00	6.20	6.40	6.45	7.55	7.60	7.70	7.85	8.05	8.20	9.35	9.50	9.60	.....	.....
HARTFORD	Plain	13.25	13.80	.....	17.95	18.85	20.80	27.15	.....	.....	27.45	28.00	29.30	30.05	36.20	31.90	.....	.....	40.45	42.25	42.90	44.65	48.20	56.25	51.10	.....	.....
	Hartford Anti-Skid	15.25	14.50	.....	18.80	10.80	21.85	28.45	.....	.....	28.85	29.35	20.80	31.50	28.00	33.50	.....	.....	42.45	44.35	45.05	46.85	50.60	59.05	53.70	.....	.....
	Gray Tubes	2.85	3.00	.....	3.75	3.85	4.00	4.30	.....	.....	4.85	5.00	5.15	5.25	5.45	5.65	.....	.....	6.45	6.60	6.85	7.10	8.00	8.15	8.30	.....	.....
	Red Tubes	3.65	3.75	.....	4.65	4.80	4.90	5.35	.....	.....	6.00	6.05	6.15	6.25	6.55	6.65	.....	.....	8.10	8.25	8.40	8.50	9.65	9.90	10.10	.....	.....
HAWKEYE	Plain	13.42	14.47	.....	17.88	.....	21.12	.....	.....	.....	27.83	29.15	30.80	31.30	.....	33.28	.....	40.70	41.53	43.34	44.06	45.93	50.38	51.32	53.13	.....	.....
	Non-Skid	14.80	15.90	.....	19.97	.....	23.60	.....	.....	.....	31.52	32.12	33.83	34.54	.....	36.69	.....	44.39	45.49	47.41	47.91	49.72	55.88	56.82	58.53	.....	.....
	Ribbed Tread Non-Skid	19.47	20.96	.....	26.57	.....	30.75	.....	.....	.....	40.70	41.53	43.78	44.61	.....	46.59	.....	51.81	54.07	57.09	61.77	62.76	68.81	71.83	73.48	.....	.....
	Red Tubes	3.25	3.35	.....	3.85	4.30	4.05	4.25	.....	.....	5.40	5.50	5.75	5.90	6.00	6.10	.....	7.15	7.20	7.30	7.50	7.70	8.60	8.80	8.90	.....	.....
	Gray Tubes	2.80	2.90	.....	3.45	3.50	3.55	3.80	.....	.....	4.80	4.90	5.05	5.20	5.35	5.45	.....	6.40	6.45	6.55	6.65	6.75	7.70	7.80	8.00	.....	.....
HENDRIE	Plain	16.10	16.65	18.00	19.90	21.30	22.30	24.95	.....	29.00	29.55	30.65	31.35	32.05	33.15	33.40	40.70	41.45	42.15	43.80	44.35	45.85	52.35	53.50	56.75	69.60	72.20
	Non-Skid	19.20	20.20	21.30	24.15	24.70	26.75	29.25	.....	33.05	34.20	35.10	36.25	37.05	38.05	38.65	46.55	47.25	48.05	51.60	55.30	54.20	61.90	62.45	63.75	78.40	85.25
	California Non-Skid	22.05	23.15	24.40	27.80	28.35	31.90	33.60	.....	37.95	39.35	40.30	41.70	42.55	43.85	44.50	53.50	54.40	55.20	59.30	60.10	62.95	71.10	71.70	73.30	10.15	98.00
	Hendrie Gray Tube	3.45	3.65	4.05	4.25	4.40	4.45	4.75	.....	5.80	5.90	6.05	6.25	6.45	6.55	6.70	7.65	7.80	7.85	8.00	8.25	8.35	9.40	9.65	9.80	10.80	11.00
	California Red Tube	4.35	4.40	4.50	5.30	5.35	5.40	5.70	.....	6.70	6.90	7.00	7.15	7.30	7.45	7.60	9.20	9.40	9.65	9.85	10.05	10.30	11.65	11.75	12.00	12.60	12.75
HIGHWAY	Non-Skid	qs14.85	qs14.30	.....	qs18.35	.....	c21.75	.....	.....	.....	qs28.50	qc29.20	c30.40	c31.25	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Red Tubes	3.50	3.40	3.80	4.20	4.25	4.35	4.65	4.95	5.35	5.50	5.60	5.85	6.10	6.25	6.35	.....	.....	7.30	7.40	7.50	7.75	8.90	9.20	9.00	.....	.....
	Gray Tubes	3.10	3.05	3.50	3.55	3.85	3.95	4.55	4.70	4.95	4.75	4.85	5.00	5.20	5.70	5.45	.....	.....	6.45	6.55	6.70	7.00	8.00	8.50	8.20	.....	.....
HOOD	Plain	qs18.80	qs19.20	qs20.70	25.50	qs27.25	28.65	c30.65	.....	.....	qs33.50	34.10	34.75	35.65	36.65	37.65	sc50.00	c47.20	49.10	50.35	51.35	c52.50	c62.00	s63.25	64.25	cs82.50	cs83.25
	Arrow Non-Skid	22.50	23.00	25.00	29.50	31.90	33.15	35.50	.....	.....	39.75	40.60	41.70	42.50	44.50	46.75	55.50	56.30	56.90	58.10	58.75	59.75	68.60	69.60	70.90	87.50	91.50

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TIRES AND TUBES—Continued

Name	Trade Name and Tread	28x3	30x3	32x3	30x3½	31x3½	32x3½	34x3½	36x3½	30x4	31x4	32x4	33x4	34x4	35x4	36x4	32x4½	33x4½	34x4½	35x4½	36x4½	37x4½	35x5	36x5	37x5	37x5½	38x5½
HOOD (Continued)	Puritan Plain	.....	qs15.20	.....	qs17.10	qs18.50	19.50	c22.00	.....	.....	qs27.50	c28.25	c29.00	c29.65	cs30.75	c31.85	.....	c36.85	c37.95	c39.35	c40.00	c41.55	c47.30	cs48.95	cs49.70	.....	.....
	Puritan Gripper Non-Skid	.....	17.20	.....	19.70	21.20	22.75	26.00	.....	.....	32.10	32.50	32.90	33.50	34.25	35.50	.....	43.45	44.40	45.90	46.50	47.85	55.70	57.40	58.50	.....	.....
	Hood Red and Gray Tubes	3.85	4.00	4.50	4.75	4.90	4.95	5.20	.....	5.80	5.90	6.00	6.10	6.25	6.40	6.55	7.65	7.80	7.95	8.10	8.35	8.60	9.45	9.60	9.75	11.20	11.75
	Puritan Red and Gray Tubes	3.40	3.45	.....	4.05	4.20	4.40	4.80	5.20	5.40	5.15	5.25	5.35	5.50	5.90	6.30	6.85	6.95	7.05	7.15	7.25	7.60	8.30	8.45	8.60	10.00	11.00
HOWE	Ribbed Tread	.....	qs18.80	.....	qs22.50	.....	.....	.....	.....	.....	qs32.50	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Non-Skid	qs19.20	.....	.....	.....	.....	29.40	.....	.....	.....	.....	c36.80	c37.75	c39.00	cs40.50	c42.80	.....	qc46.25	c48.20	c50.25	c52.80	cs54.05	c60.00	cs62.50	c63.95	.....	.....
	Gray Tubes	2.90	3.00	3.20	3.50	3.60	3.75	3.95	4.25	4.70	4.75	4.85	5.00	5.15	5.40	5.50	6.10	6.15	6.25	6.45	6.65	6.90	7.80	8.00	8.10	9.20	9.45
	Red Tubes	3.55	3.65	3.80	4.35	4.40	4.55	4.80	5.00	5.55	5.65	5.80	5.90	6.00	6.20	6.30	7.65	7.80	8.00	8.25	8.35	8.55	9.70	10.10	10.25	10.85	11.00
INDIANA	Plain	c12.25	c12.75	16.60	16.25	17.75	19.20	21.65	.....	.....	25.30	25.75	27.25	27.70	28.75	29.25	.....	37.15	37.95	39.30	39.95	41.55	46.25	47.05	48.75	.....	.....
	Button and Traction Non-Skid	c13.75	c14.25	18.85	18.15	19.40	21.45	24.50	.....	.....	28.65	29.15	30.80	31.35	33.00	33.55	.....	42.15	42.50	44.20	44.70	46.40	54.50	55.50	57.35	.....	.....
	Gray Tubes	2.85	2.90	3.35	3.45	3.60	3.75	3.95	.....	.....	4.60	4.85	5.05	5.20	5.35	5.45	.....	6.40	6.50	6.70	6.95	7.10	7.70	7.90	8.15	.....	.....
	Brown Tubes	3.30	3.40	3.80	4.15	4.25	4.40	4.65	.....	.....	5.50	5.65	5.90	6.15	6.30	6.45	.....	7.15	7.30	7.45	7.70	7.85	8.65	8.85	9.00	.....	.....
KELLY-SPRINGFIELD	Plain	qs21.90	qs20.95	.....	25.45	s28.20	29.90	32.50	s42.00	s44.95	s35.00	36.30	37.65	38.95	40.10	41.35	s56.20	s46.35	47.95	49.40	50.75	52.10	58.95	60.65	62.15	s81.05	s93.10
	Driving Tread	.....	.....	.....	.....	.....	.....	.....	.....	.....	qs42.55	c43.70	c44.95	c46.20	c48.65	c51.05	.....	c53.45	c55.45	c58.05	c63.95	c65.10	c72.20	c75.55	c76.95	.....	cs100.60
	Kant-Slip Tread	qs26.55	qs25.00	.....	qs31.30	qs32.30	35.70	c38.80	.....	.....	s43.15	c44.55	c45.90	c47.50	c49.05	c51.80	.....	c53.70	c55.65	c59.00	64.05	c65.40	c72.85	75.65	77.45	cs96.35	cs112.05
	Red Tubes	3.65	3.75	4.00	4.80	4.95	5.15	5.45	5.85	5.95	6.10	6.20	6.40	6.65	6.75	6.90	7.80	8.05	8.30	8.45	8.80	9.05	9.95	10.15	10.55	12.05	12.25
KNIGHT	Blackstone	.....	14.25	.....	18.15	19.40	21.45	30.40	.....	.....	28.65	29.15	30.80	31.35	.....	33.55	.....	42.15	42.50	44.20	44.70	.....	.....	.....	57.35	10.50	12.00
	Knight Plain	.....	20.50	.....	25.40	27.30	28.00	30.40	.....	.....	33.80	34.95	36.00	37.30	.....	39.30	.....	43.10	44.30	45.45	47.45	49.55	55.45	56.60	58.85	.....	.....
	Non-Skid	.....	22.50	.....	28.15	29.05	32.15	.....	.....	.....	38.85	40.10	41.30	42.75	.....	46.60	.....	48.35	50.10	53.10	57.65	58.85	65.55	68.10	69.70	86.70	92.85
	Blackstone Tubes	.....	3.10	.....	3.60	3.75	3.80	4.05	.....	.....	4.80	4.95	5.10	5.30	.....	5.55	.....	6.35	6.40	6.60	6.70	6.90	7.75	7.90	8.05	.....	.....
	Knight Tubes	.....	3.65	.....	4.65	4.85	5.00	5.40	.....	.....	5.80	6.00	6.25	6.50	6.75	7.00	.....	7.90	8.10	8.30	8.60	9.00	9.40	9.80	10.10	11.50	13.00
KOKOMO	Plain	qs16.20	qs16.85	.....	qs21.90	.....	q25.30	.....	.....	.....	qs33.40	qc34.15	c35.80	c36.55	.....	c39.05	.....	.....	c49.30	c51.50	c52.40	c54.50	.....	.....	c62.25	.....	.....
	Gridiron Non-Skid	qs17.00	qs17.70	.....	qs22.90	.....	q26.85	.....	.....	.....	qs35.20	qc35.95	c37.50	c38.40	.....	c40.95	.....	.....	c51.85	c54.15	c54.90	c57.20	.....	.....	c65.40	.....	.....
	Standard Gray Tubes	3.20	3.40	3.60	4.00	4.20	4.25	4.50	4.75	.....	5.25	5.35	5.55	5.70	5.90	6.05	.....	.....	6.90	7.15	7.35	7.60	8.65	9.00	9.25	9.75	.....
	Standard Red Tubes	3.60	3.70	3.90	4.50	4.70	4.75	5.00	5.25	.....	5.85	6.00	6.10	6.30	6.60	6.75	.....	.....	7.75	7.90	8.15	8.45	9.60	9.75	10.00	10.80	.....
	Everlast Gray Tubes	3.85	3.95	4.40	4.75	4.95	5.00	4.55	5.65	.....	6.20	6.30	6.50	6.70	6.90	7.15	.....	.....	8.15	8.40	8.65	8.95	10.15	10.35	10.55	12.05	.....
	Everlast Red Tubes	4.20	4.35	4.95	5.35	5.50	5.60	5.85	6.25	.....	6.90	7.00	7.20	7.40	7.65	7.95	.....	.....	9.10	9.30	9.55	9.95	11.30	11.35	11.65	13.40	.....
LEE	Standard Plain	15.75	14.25	19.00	18.30	19.40	21.45	26.75	30.25	33.00	28.10	29.00	30.00	31.05	35.55	34.20	40.70	40.50	41.70	43.15	43.85	46.65	50.90	51.75	53.65	73.05	73.80
	Standard Non-Skid	16.50	15.70	21.70	20.15	21.35	23.60	29.85	33.40	36.50	30.90	31.90	33.00	34.15	39.35	37.60	44.10	44.55	45.85	47.45	48.25	51.30	56.00	56.80	59.00	88.00	88.75
	Puncture Proof Plain	26.95	26.90	26.80	33.60	34.50	35.75	40.85	43.25	43.65	41.05	44.75	46.80	48.35	52.85	53.75	53.25	54.35	56.75	58.85	60.05	62.25	71.45	72.50	73.50	81.60	83.85
	Puncture Proof Non-Skid	29.60	28.25	33.20	34.70	35.90	37.85	44.45	46.75	47.95	43.35	47.75	50.05	51.35	57.90	58.65	61.40	59.20	60.90	63.10	64.85	70.05	76.55	77.90	79.65	95.65	98.00
	Gray Tubes	3.10	3.05	3.40	3.75	4.00	4.10	4.55	4.80	4.95	5.00	5.10	8.25	5.40	5.80	6.00	6.50	6.15	6.25	6.45	6.65	6.90	7.80	7.95	8.10	9.25	9.45
	Red Tubes	3.40	3.35	3.80	4.20	4.35	4.45	5.05	5.35	5.50	5.45	5.55	5.70	5.90	6.45	6.50	7.20	6.80	7.00	7.15	7.35	7.65	8.70	8.85	8.95	10.30	10.50
McCREARY	Plain	14.75	15.35	18.90	19.15	22.20	23.80	27.05	.....	.....	31.10	31.55	33.45	34.05	.....	35.80	.....	42.50	43.90	46.00	46.55	48.60	57.65	.....	59.60	.....	.....
	Non-Skid	16.70	17.75	.....	22.50	24.25	26.75	30.60	.....	.....	35.15	35.80	37.85	38.55	.....	41.20	.....	49.70	51.10	53.75	54.55	56.85	64.75	.....	67.05	.....	.....
	Gray	3.05	3.10	3.55	3.70	3.90	4.05	4.30	.....	.....	5.00	5.25	5.45	5.60	.....	5.90	.....	6.90	7.00	7.20	7.55	7.70	8.30	.....	8.75	.....	.....
	Red	3.85	4.00	4.60	4.85	4.90	5.10	5.40	.....	.....	6.40	6.60	6.90	7.00	.....	7.50	.....	8.35	8.50	8.70	9.00	9.20	10.25	.....	10.55	.....	.....
McGRAW	Congress Plain	qs13.90	qs13.65	qs18.15	17.90	qs18.60	20.80	24.15	.....	qs29.00	qs27.15	27.95	29.15	29.70	33.70	31.75	.....	.....	39.75	41.70	42.35	43.60	47.70	53.15	50.50	.....	.....
	Congress Non-Skid	qs14.85	qs14.30	.....	18.35	qs19.70	21.75	25.80	.....	qs30.20	qs28.50	29.20	30.40	31.25	35.35	33.10	.....	qc40.45	42.00	43.55	44.45	46.05	50.05	56.55	52.95	.....	.....
	Imperial Plain	qs13.90	qs13.65	qs18.15	17.90	qs18.60	20.80	24.15	qs27.70	qs29.00	qs27.15	27.95	29.15	29.70	33.70	31.75	qs40.70	.....	39.75	41.70	42.35	43.60	47.70	53.15	50.50	.....	.....
	Imperial Non-Skid	qs14.85	qs14.30	.....	18.35	qs19.70	21.75	25.80	.....	qs30.20	qs28.50	29.20	30.40	31.25	35.35	33.10	qs42.90	qc40.45	42.00	43.55	44.45	46.05	50.05	56.55	52.95	.....	.....
	McGraw Plain	qs13.90	qs13.65	qs18.15	17.90	qs18.60	20.80	24.15	qs27.70	qs29.00	qs27.15	27.95	29.15	29.70	33.70	31.75	qs40.70	.....	39.75	41.70	42.35	43.60	47.70	53.15	50.50	.....	.....
	McGraw Non-Skid	qs14.85	qs14.30	.....	18.35	qs19.70	21.75	25.80	.....	qs30.20	qs28.50	29.20	30.40	31.25	35.35	33.10	.....	qc40.45	42.00	43.55	44.45	46.05	50.05	56.55	52.95	.....	.....
	Pullman Plain	qs13.90	qs13.65	qs18.15	17.90	qs18.60	20.80	24.15	qs27.70	qs29.00	qs27.15	27.95	29.15	29.70	33.70	31.75	qs40.70	.....	39.75	41.70	42.35	43.60	47.70	53.15	50.50	.....	.....
	Pullman Non-Skid	qs14.85	qs14.30	.....	18.35	q 19.70	21.75	25.80	.....	qs30.20	qs28.50	29.20	30.40	31.25	35.35	33.10	.....	qc40.45	42.00	43.55	44.45	46.05	50.05	56.55	52.95	.....	.....
	Red Tubes	3.50	3.40	3.80	4.20	4.25	4.35	4.65	4.95	5.35	5.50	5.60	5.85	6.10	6.25	6.35	7.10	7.15	7.30	7.40	7.50	7.75	8.90	9.20	9.00	.....	.....
	Gray Tubes	3.10	3.05	3.50	3.55	3.85	3.95	4.55	4.70	4.95	4.75	4.85	5.00	5.20	5.70	5.45	6.50	6.30	6.45	6.55	6.70	7.00	8.00	8.50	8.20	.....	.....
McNAULL	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	32.83	.....	42.69	.....	.....	.....	.....	54.71	.....	58.06	.....	62.42	70.65	74.44	74.44	.....	100.57
	Tubes	.....	3.90	.....	5.00	.....	5.39	5.75	.....	.....	6.38	6.49	6.71	6.93	7.04	7.20	.....	8.42	8.69	8.85	9.18	9.46	10.39	10.61	11.00	12.59	12.81
MANSFIELD	Plain	14.75	14.45	18.95	19.40	20.95	22.15	25.75	.....	26.55	27.90	29.60	30.00	31.05	35.00	33.00	.....	.....	41.80	43.12	44.35	45.60	50.20	58.10	52.25	.....	.....
	Non-Skid	16.25	15.90	.....	21.35	23.15	24.45	28.35	.....	.....	30.80	32.60	33.00	34.10	38.50	36.30	.....	.....	46.00	47.45	48.75	50.20	55.30	.....	59.05	.....	.....
	Gray Tubes	3.00	3.05	3.55	3.75	3.90	4.10	4.75	.....	5.20	4.85	5.00	5.20	5.40	5.90	5.70	.....	.....	6.50	6.60	6.85	7.05	8.05	8.60	8.30	.....	.....
	Red Tubes	3.70	.....	.....	4.40	4.60	4.80	5.50	.....	6.20	5.90	6.05	6.20	6.35	7.00	6.80	.....	.....	7.95	8.10	8.30	8.55	9.60	10.30	9.90	.....	.....
MARATHON	Runner	qs14.95	qs15.70	.....	qs19.95	qs21.40	23.35	c26.90	.....	.....	qs31.85	c32.80	c33.75	c34.70	c36.10	c37.55	qc43.80	.....	c46.55	c47.95	c49.40	c51.25	c59.95	c60.10	c61.30	cs81.80	cs83.95
	Angle Non-Skid	qs15.75	qs16.50	.....	qs21.00	qs22.50	24.55	c28.30	.....	.....	qs33.50	c34.50	c35.50	c36.50	c38.00	c39.50	qc46.10	c47.55	c49.00	c50.45	c51.90	c53.95	c61.00	c63.25	c64.50	cs86.10	cs88.35
	Heavy Red Tube	3.10	3.30	4.15	.....	4.30	4.45	4.80	.....	.....	5.55	5.70	5.90	6.05	6.20	6.40	7.45	7.65	7.85	8.10	8.30	8.50	9.50	9.80	10.05	11.25	11.60
	Gray Tube	2.80	3.05	3.75	.....	3.90	4.05	4.40	.....	.....	5.00	5.15	5.35	5.50	5.65	5.85	6.60	6.80	7.05	7.25	7.50	7.70	8.50	8.80	9.05	10.15	10.50
	Cord Runner	.....	.....	.....	qs32.35	qs33.15	34.55	.....	.....	.....	qs42.50	c43.95	c45.15	c46.35	.....	.....	qc49.50	c50.80	c52.10	c53.35	c54.65	.....	c64.80	.....	c67.90	.....	cs82.30
	Cord Angle Non-Skid	.....	.....	.....	qs34.05	qs34.90	36.40	.....	.....	.....	qs44.75	c46.25	c47.50	c48.80	.....	.....	qc52.10	c53.45	c54.85	c56.15	c57.55	.....	c68.20	.....	c71.50	.....	cs86.65
MARION	Plain	qs13.20	qs14.30	.....	qs18.05	c20.00	c22.00	.....	.....	.....	qs28.60	.....	c30.80	c32.55	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Non-Skid	qs14.95	qs15.95	.....	qs20.40	.....	c23.90	.....	.....	.....	qs30.80	c31.50	c33.50	c34.25	c35.90	c36.50	.....	.....	c46.00	c47.30	c47.85	c49.50	c55.00	c56.65	c58.30	.....	.....
	Gray	2.90	3.00	.....	3.60	3.70	3.75	.....	.....	.....	4.75	5.00	5.20	5.30	5.45	5.55	.....	.....	6.40	6.60	6.75	7.10	8.10	8.20	8.25	.....	.....
	Red	.....	3.80	.....	4.50	4.75	4.85	.....	.....	.....	5.20	6.25	6.50	6.65	6.90	7.10	.....	.....	7.80	8.40	8.60	9.25	9.50	9.70	9.90	.....	.....
MASON	Plain Tread	14.10	14.90	.....	19.00	20.40	22.15	.....	.....	.....	29.10	29.60	31.35	31.85	.....	33.65	40.85	.....	41.75	43.25	43.95	45.70	50.90	51.75	53.65	.....	.....
	Ribbed Tread	14.85	15.95	.....	20.35	21.95	23.95	27.25	.....	.....	30.20	30.70	32.60	33.10	34.95	35.35	44.50	.....	45.05	46.80	47.45	49.25	56.10	57.95	59.95	.....	.....
	Non-Skid	15.40	16.50	.....	21.20	22.65	24.80	28.05	.....	.....	31.50	32.05	33.90	34.50	36.30	36.90	46.35	.....	46.75	48.60	49.15	51.05	59.95	61.05	63.10	.....	.....
	Gray Tubes	3.15	3.20	.....	3.80	3.95	4.15	4.35	.....	.....	5.05	5.35	5.55	5.70	5.90	6.00	7.05	.....	7.15	7.35	7.65	7.80	8.50	8.70	8.95	.....	.....
	Red Tubes	3.65	3.75	.....	4.55	4.70	4.85	5.10	.....	.....	6.05	6.20	6.50	6.75	6.95	7.10	7.85	.....	8.05	8.20	8.45	8.65	9.50	9.75	9.90	.....	.....

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Name	Trade Name and Tread	28x3	30x3	32x3	30x3½	31x3½	32x3½	34x3½	36x3½	30x4	31x4	32x4	33x4	34x4	35x4	36x4	32x4½	33x4½	34x4½	35x4½	36x4½	37x4½	35x5	36x5	37x5	37x5½	38x5½
MATTSON	Plain	s12.04	s13.15	s14.25	16.43	s17.54	18.65	19.73	.....	s21.91	23.02	24.10	25.20	26.30	27.41	28.49	.....	.....	31.28	32.35	33.41	34.52	s38.24	39.42	40.55	.....	.....
	Non-Skid	s12.64	s13.79	s14.96	17.25	s18.41	19.56	20.71	.....	s23.00	24.16	25.31	26.46	27.62	28.77	29.91	.....	.....	32.79	33.97	35.08	36.25	s40.26	41.42	42.58	.....	.....
	Gray Tubes	3.00	3.05	3.35	3.65	3.75	4.00	4.05	.....	4.20	4.55	4.80	5.00	5.15	5.15	5.20	.....	.....	5.35	5.50	5.95	6.30	6.50	6.65	6.90	.....	.....
MICHELIN	Plain Tread	qs14.95	qs15.60	.....	qs21.50	qs22.60	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Universal Tread	.....	.....	.....	qs22.50	.....	c25.40	c27.10	.....	.....	s31.50	c35.15	c35.40	c36.65	cs38.25	c39.80	qc44.75	.....	c47.60	c50.10	c51.15	cs52.95	c58.40	cs59.80	c60.50	.....	.....
	Tubes	3.55	3.70	.....	.....	3.70	4.40	4.80	.....	5.55	5.10	5.80	5.30	6.20	5.60	6.65	7.60	6.80	8.00	7.20	8.45	7.70	9.70	10.10	10.25	11.30	11.30
MOHAWK	Plain	qs18.70	qs19.65	.....	24.00	qs26.55	28.05	c30.65	.....	.....	qs35.35	c36.50	37.55	38.90	c40.20	42.45	.....	c45.70	47.85	49.85	52.60	c53.80	c59.65	s62.00	c63.45	cs78.95	.....
	Non-Skid	qs22.55	qs23.70	.....	20.00	qs31.10	34.45	c37.55	.....	.....	qs41.60	43.10	c44.20	45.90	c47.45	50.15	.....	c54.05	56.45	58.90	61.85	c63.35	c70.35	s73.35	75.00	cs93.10	cs96.65
	Ribbed Tread	.....	qs21.10	.....	qs25.95	.....	qc30.35	.....	.....	.....	qs38.45	qc39.65	qc40.85	c42.05	.....	.....	.....	.....	c51.65	qc53.85	c56.95	.....	c64.90	.....	c68.45	.....	.....
	Pure Gum and Red Tubes	3.40	3.55	.....	4.55	4.70	4.90	5.20	.....	.....	5.75	5.85	6.10	6.25	6.35	6.55	7.35	7.65	7.85	8.00	8.25	8.60	9.35	9.65	9.95	11.40	11.60
	Keaton	.....	.....	.....	qs31.55	.....	qc36.35	.....	.....	.....	qs43.85	qc45.40	qc46.60	qc48.35	.....	.....	qc55.55	.....	c60.00	qc61.10	c64.45	.....	c74.45	.....	c78.05	.....	.....
MONARCH	Gray Tubes	3.15	3.35	.....	4.15	4.20	4.25	.....	.....	.....	5.25	5.35	5.50	5.65	.....	6.10	.....	6.80	6.90	7.15	7.35	7.60	8.60	8.70	8.95	.....	.....
	Red Tubes	3.45	3.70	.....	4.65	4.70	4.75	.....	.....	.....	5.85	5.95	6.10	6.30	.....	6.75	.....	7.50	7.75	7.90	8.10	8.45	9.60	9.75	9.85	.....	.....
NABOB	Plain	qs19.70	qs18.85	.....	s22.90	qs25.40	26.90	c29.25	.....	.....	q31.50	c32.65	c33.90	c35.05	c36.10	c37.20	.....	c41.70	c43.15	c44.45	c45.70	c46.90	c53.05	c54.60	c55.95	c72.95	cs83.85
	Safety Traction Non-Skid	.....	qs22.50	.....	s28.15	qs29.05	32.15	c34.90	.....	.....	q38.85	c40.10	c41.30	c42.75	c44.15	c46.60	.....	c48.35	c50.10	c53.10	c57.65	c58.85	c65.55	c68.10	c69.70	c86.70	cs100.80
	Red Tubes	3.45	3.55	.....	4.55	4.70	4.90	5.20	.....	.....	5.80	5.90	6.10	6.30	6.40	6.55	.....	7.65	7.90	8.05	8.35	8.60	9.45	9.65	10.00	11.45	11.65
NASSAU	Plain	12.85	13.20	14.60	17.10	18.25	19.95	23.05	22.90	24.75	26.25	26.25	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Non-Skid	14.40	14.85	16.50	18.65	20.70	22.40	26.05	23.60	27.90	29.50	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Nassau Gray Tubes	3.20	3.15	3.45	3.85	3.90	3.95	4.60	4.90	5.05	4.85	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
NATIONAL	Non-Skid	.....	qs18.66	.....	qs23.33	.....	c30.00	c37.33	.....	.....	qs34.99	c36.40	c37.80	c39.20	.....	c42.00	.....	qc53.33	c53.33	c54.66	c56.00	qc59.33	qc68.60	qc70.00	c70.00	.....	.....
	Red Tubes	4.33	4.46	.....	5.66	6.00	6.33	6.66	6.98	6.98	7.33	7.66	8.00	8.33	8.66	9.33	.....	9.69	9.85	10.08	10.40	10.77	12.00	12.66	13.33	14.66	15.33
NEEDHAM	Plain	qs12.00	qs13.00	.....	16.50	17.50	19.25	c21.65	.....	.....	25.75	c26.35	c27.65	c28.15	c29.30	c29.75	.....	c36.25	c37.50	c39.20	c39.70	c41.20	c44.60	c45.20	c46.90	cs64.95	cs66.55
	Non-Skid	.....	.....	.....	19.00	19.90	22.10	c24.75	.....	.....	29.85	c30.30	c31.70	c32.25	c33.60	c34.05	.....	c42.30	c43.20	c44.95	c45.45	c47.20	c51.10	c51.75	c53.75	cs74.40	cs76.25
	Tubes	2.80	2.90	.....	3.30	3.40	3.45	3.60	.....	.....	4.55	4.70	4.85	4.95	5.05	5.15	.....	6.10	6.20	6.30	6.40	6.60	7.55	7.70	7.85	8.45	8.55
NEWCASTLE	Plain	.....	14.75	.....	19.20	21.10	21.65	23.50	.....	.....	.....	26.25	27.20	28.15	29.00	29.95	.....	.....	36.50	37.60	38.65	39.70	44.85	46.15	47.35	.....	.....
	Non-Skid	.....	16.30	.....	21.25	23.90	24.50	26.60	.....	.....	29.55	30.60	31.50	32.65	33.45	34.40	.....	.....	38.15	39.35	42.70	43.55	48.50	49.55	53.00	.....	.....
	Shenango Non-Skid	.....	.....	.....	28.15	.....	32.15	qc23.15	.....	.....	.....	.....	c41.30	c47.25	.....	.....	.....	.....	.....	c53.10	c57.65	.....	c65.55	.....	cs58.90	c69.70	.....
	Pure Gum Gray Tubes	.....	3.20	.....	4.10	4.25	s4.40	4.70	.....	.....	5.20	5.30	5.50	5.65	5.75	5.90	.....	.....	7.10	7.25	7.50	7.75	8.50	8.70	9.00	.....	.....
	Newcastle	.....	s19.65	.....	s25.45	.....	.....	.....	.....	.....	.....	.....	.....	cs40.75	.....	.....	.....	.....	.....	.....	cs54.80	.....	.....	.....	cs63.85	.....	.....
NORWALK	Plain	.....	s19.65	.....	s25.45	.....	.....	.....	.....	.....	.....	.....	.....	cs40.75	.....	.....	.....	.....	.....	.....	cs54.80	.....	.....	.....	cs63.85	.....	.....
	Non-Skid	.....	s20.70	.....	s26.75	s28.25	c30.75	.....	.....	.....	s39.15	c39.85	c41.90	c42.85	.....	cs45.55	.....	.....	c54.25	c56.65	c57.50	cs59.90	c63.35	cs64.20	c67.10	.....	.....
	Gray Tubes	3.30	3.35	3.95	4.15	4.25	4.40	5.20	5.30	.....	5.40	5.55	5.70	5.85	6.25	6.30	7.15	.....	7.20	7.35	7.55	7.85	8.90	9.05	9.20	10.55	10.75
	Red Tubes	3.65	3.70	4.35	4.60	4.65	4.80	5.75	6.00	.....	5.95	6.15	6.30	6.45	6.90	6.95	7.90	.....	7.95	8.10	8.35	8.65	9.80	10.10	10.15	11.60	11.85
ORRVILLE	Plain	qs11.00	qs13.85	.....	qs15.35	.....	qc17.65	.....	.....	.....	qc23.50	.....	qc25.20	qc25.75	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Non-Skid	qc12.90	qs13.85	.....	qs19.95	.....	qc20.65	.....	.....	.....	qc27.55	.....	qc29.50	qc30.15	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Gray Tubes	2.75	2.85	.....	3.25	.....	3.40	.....	.....	.....	4.45	4.60	4.75	4.85	4.95	5.05	.....	6.00	6.05	6.15	6.25	6.45	7.35	7.50	7.60	.....	.....
	Sealon Red Tubes	3.55	3.70	.....	4.25	.....	4.40	.....	.....	.....	5.85	6.00	6.15	6.25	6.45	6.60	.....	7.70	7.85	8.05	8.20	8.35	9.60	9.75	9.90	.....	10.80
PALMER	Tubes	.....	6.35	.....	6.60	.....	7.00	.....	.....	.....	8.45	8.80	9.15	9.45	9.80	10.10	.....	11.10	11.40	11.75	12.25	.....	13.60	13.80	14.15	.....	.....
PARA-BALL	Plain	12.40	12.55	15.30	16.30	17.15	18.90	24.70	.....	27.06	24.95	25.45	26.65	27.30	32.90	29.65	.....	.....	36.75	38.40	39.00	40.60	43.85	51.15	46.45	.....	.....
	Non-Skid	13.05	13.20	16.30	17.10	18.05	19.85	25.85	.....	29.70	26.20	26.75	28.00	28.65	34.55	30.45	.....	.....	38.60	40.30	40.95	42.60	46.00	53.70	48.80	.....	.....
	Gray Tubes	2.95	3.00	3.40	3.75	3.80	3.85	4.55	.....	4.95	4.75	4.85	5.00	5.15	5.75	5.50	.....	.....	6.25	6.45	6.65	6.85	7.80	8.60	8.10	.....	.....
	Red Tubes	3.30	3.35	3.80	4.20	4.25	4.30	5.05	.....	5.50	5.30	5.40	5.55	5.70	6.45	6.10	.....	.....	7.00	7.15	7.35	7.65	8.70	9.50	8.95	.....	.....
PEARCE	Morton Plain	11.00	11.85	.....	15.35	16.20	17.65	20.00	.....	.....	24.00	24.95	25.20	25.75	26.95	27.35	33.10	34.10	34.20	35.75	36.20	39.85	43.95	44.55	45.30	.....	.....
	Non-Skid	12.00	12.85	.....	16.95	18.00	19.65	22.40	.....	.....	27.10	27.90	28.50	29.50	30.20	31.10	36.00	38.00	39.00	40.15	41.40	42.00	47.20	48.50	50.00	.....	.....
	Germantown Cord Plain	.....	17.50	.....	21.95	22.25	24.00	39.00	.....	.....	33.15	34.75	35.95	36.10	40.00	43.50	38.15	45.25	46.75	48.75	50.50	52.00	56.50	.....	58.15	.....	.....
	Non-Skid	.....	18.25	.....	23.75	25.00	27.30	41.50	.....	.....	36.35	37.10	38.95	39.70	42.35	49.00	45.00	50.20	51.90	54.25	55.00	57.30	63.80	.....	64.75	.....	.....
	Red Tubes	3.25	3.45	.....	3.95	4.10	4.25	4.50	.....	.....	5.35	5.45	5.75	5.95	6.20	6.40	6.50	6.75	7.45	7.55	7.80	8.05	9.00	9.20	9.30	.....	.....
PEERLESS	Non-Skid	.....	16.00	.....	20.40	21.95	23.85	.....	.....	.....	31.75	32.85	34.10	34.80	.....	.....	.....	.....	46.20	48.30	49.00	.....	.....	.....	64.15	.....	.....
	Gray Tubes	.....	3.05	.....	3.45	3.65	3.80	.....	.....	.....	4.90	5.05	5.25	5.35	.....	.....	.....	.....	6.50	6.75	6.90	.....	.....	.....	8.40	.....	.....
	Red Tubes	.....	3.40	.....	3.95	4.15	4.20	.....	.....	.....	5.35	5.50	5.70	5.95	.....	.....	.....	.....	7.25	7.40	7.55	.....	.....	.....	9.10	.....	.....
PENNSYLVANIA	Bar O Circle	12.80	13.45	.....	17.60	19.50	20.65	24.00	.....	.....	27.00	27.40	28.70	29.40	33.50	34.45	.....	38.40	39.70	41.40	42.05	48.15	47.35	53.60	50.10	65.15	67.80
	Ebony	14.05	14.55	19.25	18.55	19.80	21.90	25.00	31.65	34.75	29.20	29.70	31.40	32.00	33.65	34.20	49.35	43.00	43.30	45.05	45.55	47.30	55.55	56.55	58.45	70.90	73.85
	Vacuum Cup	15.60	16.10	21.35	20.60	22.00	24.30	27.75	35.20	38.65	32.40	33.00	34.90	35.55	37.40	38.00	54.85	47.75	48.10	50.05	50.60	52.55	61.70	62.85	64.95	78.75	82.00
	Ton-Tested Gray Tubes	2.80	2.90	3.15	3.40	3.55	3.70	4.05	4.40	4.90	4.95	5.05	5.25	5.45	5.55	5.75	6.50	6.65	6.70	6.80	6.95	7.25	8.15	8.25	8.40	8.80	9.00
PERFECTION	Plain	17.70	18.00	.....	21.70	23.05	25.70	27.80	.....	.....	30.00	31.00	32.00	33.10	34.20	35.30	38.20	39.40	40.65	41.80	43.10	44.25	50.10	51.30	52.80	70.20	73.60
	Non-Skid	20.85	21.05	.....	26.60	27.55	30.60	33.00	.....	.....	36.90	38.10	39.20	40.45	41.75	43.10	.....	46.00	47.60	50.00	52.40	54.60	62.10	64.30	65.70	81.70	83.40
	Gray Tubes	3.20	3.30	3.50	4.20	4.35	4.50	4.80	5.10	5.25	5.35	5.45	5.65	5.80	5.90	6.05	6.85	7.10	7.30	7.45	7.70	7.95	8.75	8.95	9.25	10.55	10.75
	Red Tubes	3.40	3.55	3.70	4.50	4.60	4.85	5.30	5.60	5.65	5.75	5.85	6.10	6.25	6.35	6.50	7.45	7.60	7.80	7.95	8.20	8.45	9.30	9.50	9.80	11.10	11.35
PHARIS	Plain	13.10	13.85	17.50	17.90	18.65	20.55	22.90	.....	.....	27.60	28.05	29.25	29.80	31.00	31.50	45.40	.....	40.00	41.55	42.10	43.55	47.25	47.85	49.70	.....	.....
	Non-Skid	.....	14.85	.....	19.15	19.95	22.00	24.60	.....	.....	29.50	30.05	31.40	31.90	33.20	33.75	47.75	42.20	42.80	44.50	45.00	46.65	50.60	51.30	53.15	83.05	73.70
	Gray Tubes	3.15	3.35	3.45	3.75	3.80	3.95	4.15	.....	.....	5.25	5.35	5.45	5.55	5.80	5.90	6.75	6.90	7.00	7.15	7.25	7.45	8.55	8.65	8.90	9.45	9.70
	Red Tubes	3.50	3.65	3.75	4.20	4.25	4.30	4.70	.....	.....	5.80	5.90	6.10	6.20	6.40	6.50	7.60	7.70	7.75	7.85	8.10	8.25	9.40	9.70	9.80	10.50	10.65
PORTAGE	Plain	s14.00	s15.10	s16.75	s19.60	s20.70	22.45	25.50	s27.00	s28.45	s30.05	30.60	32.10	32.85	34.35	35.00	s43.10	s44.55	43.65	45.75	46.40	48.30	52.20	s53.00	55.35	s79.70	.....
	Daisy Non-Skid	s16.20	s17.45	s19.30	s22.45	s23.70	25.90	29.35	.....	s32.80	s34.45	35.15	36.95	37.75	39.55	40.30	.....	51.15	50.25	52.50	53.35	55.60	60.05	s61.00	63.50	s87.70	s89.55
	Gray or Red Tubes	3.20	3.45	3.75	4.20	4.30	4.45	4.75	4.95	5.50	5.65	5.90	6.10	6.25	6.45	6.60	7.35	7.50	7.65	7.80	8.10	8.25	9.05	9.30	9.40	10.25	10.40
PORTER	Giant	qs15.00	qs16.45	.....	qs21.50	qs22.65	24.35	c26.50	.....	.....	qs31.65	c32.35	c33.30	c34.35	c35.25	c36.30	qc44.00	c45.25	c46.25	47.70	c48.80	c50.00	c56.10	cs57.20	c59.25	.....	.....
	Non-Skid	qs16.00	qs17.55	.....	qs22.85	qs24.25	26.30	c27.95	.....	.....	qs34.95	c35.45	c36.60	c37.40	c39.45	c40.00	qc47.75	c49.00	c51.15	.....	c52.55	c53.90	c59.95	cs61.60	c62.95	.....	.....
	Gray Tubes	2.85	3.00	.....	3.60	3.70	3.75	3.95	.....	.....	4.75	4.95	5.05	5.25	5.45	5.60	6.25	6.35	6.50	6.60	6.75	6.95	7.85	8.00	8.15	.....	.....
	Red Tubes	3.15	3.40	.....	3.95	4.10	4.20	4.40	.....	.....	5.30	5.45	5.65	5.85	5.95	6.15	7.00	7.15	7.25	7.35	7.50	7.75	8.75	8.90	9.00	.....	.....

NOTE—The letter c means that a CLINCHER tire is NOT made in this size; q that a QUICK-DETACHABLE is not made in this size, and s that a STRAIGHT-SIDE is not made in this size.

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TIRES AND TUBES—Continued

Name	Trade Name and Tread	28x3	30x3	32x3	30x3½	31x3½	32x3½	34x3½	36x3½	30x4	31x4	32x4	33x4	34x4	35x4	36x4	32x4½	33x4½	34x4½	35x4½	36x4½	37x4½	35x5	36x5	37x5	37x5½	38x5½
QUAKER	Plain	s14.30	s15.15	s16.00	19.45	s20.35	22.45	24.95	.....	.....	s30.20	30.70	32.00	32.55	c33.95	34.50	qs41.25	.....	44.15	c45.80	46.40	c48.15	c52.25	52.80	c54.90	cs71.35	cs74.30
	T.T.T. Non-Skid	s15.85	s16.85	s18.05	21.60	s22.45	24.95	27.85	.....	.....	s33.55	34.15	35.55	36.20	c37.75	38.35	qs43.40	.....	46.50	c48.30	48.85	c50.60	c54.95	55.60	c57.75	cs75.15	cs78.25
	Gray Tubes	3.20	3.35	3.50	3.75	3.95	4.00	4.20	4.35	5.00	5.10	5.40	5.50	5.60	5.80	5.90	6.80	7.00	7.05	7.15	7.25	7.45	8.55	8.65	8.90	9.45	9.85
	Red Tubes	3.50	3.70	3.90	4.15	4.35	4.40	4.60	4.85	5.50	5.55	5.95	6.05	6.15	6.40	6.50	7.55	7.70	7.75	7.85	8.00	8.20	9.40	9.50	9.80	10.40	10.90
RACINE	Plain	14.20	15.20	17.70	18.70	19.75	21.75	26.25	28.45	30.00	28.70	29.25	31.25	32.05	32.90	33.45	39.60	40.45	41.75	42.35	43.75	46.15	51.50	53.00	54.50	68.95	71.25
	Country Road	16.55	17.75	20.85	21.55	22.60	25.50	28.75	33.00	35.15	33.00	34.75	36.80	37.35	37.70	38.05	47.50	48.40	49.10	51.35	52.15	54.20	62.00	63.50	65.00	81.40	83.60
	Ribbed Cord	.....	.....	.....	.....	.....	39.80	.....	.....	.....	48.80	50.50	51.90	53.25	.....	.....	56.95	58.35	59.95	61.35	62.90	.....	74.60	76.30	78.00	92.50	94.60
	Non-Skid Cord	.....	.....	.....	.....	.....	42.35	.....	.....	.....	52.05	53.85	55.30	56.75	.....	.....	60.65	62.20	63.35	65.40	67.00	.....	79.40	81.40	83.20	98.60	100.85
	Gray Tubes	2.85	3.00	3.25	3.50	3.60	3.75	3.90	4.15	4.60	4.70	4.90	5.00	5.20	5.40	5.50	6.20	6.35	6.45	6.55	6.75	6.90	7.85	7.95	8.10	8.45	8.65
	Red Tubes	3.40	3.70	3.95	4.05	4.30	4.40	4.60	4.85	5.40	5.50	5.65	5.95	6.10	6.25	6.50	7.20	7.45	7.50	7.70	7.80	8.05	9.15	9.30	9.40	9.90	10.00
RACINE HORSESHOE	Plain	qs16.00	qs16.50	qs17.50	20.50	qs21.00	22.50	23.50	.....	qs28.50	qs26.50	28.50	29.00	29.50	31.00	31.50	qc36.50	qc36.50	36.50	38.00	39.00	40.00	44.00	45.00	46.00	cs65.00	cs66.00
	Non-Skid	qs17.00	qs17.50	qs19.50	21.50	qs22.00	24.00	27.00	.....	qs32.50	qs31.00	31.50	32.00	32.50	34.50	35.50	qc40.00	qc41.00	42.00	43.00	44.00	45.00	51.00	52.00	52.50	cs69.00	cs70.00
	Corp Non-Skid	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	qc46.50	qc47.50	48.50	.....	.....	qc55.50	56.50	57.50	58.50	.....	68.50	.....	70.50	.....	.....	cs88.50
	Gray Tubes	3.00	3.05	3.40	3.75	3.80	3.85	4.00	.....	4.70	4.75	4.85	5.00	5.15	5.45	5.50	6.15	6.15	6.25	6.45	6.65	6.90	7.80	8.00	8.10	8.75	9.25
	Red Tubes	.....	3.40	.....	4.25	4.35	4.45	.....	.....	.....	5.45	5.50	5.60	5.75	.....	6.25	.....	.....	7.50	7.75	7.80	7.90	8.80	8.95	9.25	9.50	9.75
RECORD	Ribbed Tread	.....	qs14.30	.....	qs18.35	.....	qc21.75	.....	.....	.....	qs28.50	qc29.20	c30.40	c31.25	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Red Tubes	3.50	3.40	3.80	4.20	4.25	4.35	4.65	4.95	5.35	5.50	5.60	5.85	6.10	6.25	6.35	.....	.....	7.30	7.40	7.50	7.75	8.90	9.20	9.00	.....	.....
	Gray Tubes	3.10	3.05	3.50	3.55	3.85	3.95	4.55	4.70	4.95	4.75	4.85	5.00	5.20	5.70	5.45	.....	.....	6.45	6.55	6.70	7.00	8.00	8.50	8.20	.....	.....
REPUBLIC	Plain	qs14.15	qs15.20	qs19.30	19.30	qs20.75	22.50	25.65	s32.60	s34.45	s30.05	30.70	32.25	32.95	34.45	35.00	41.05	c42.30	43.75	45.80	46.40	48.35	53.65	54.35	56.85	s79.05	s78.25
	Staggard Non-Skid	qs16.60	qs17.70	qs22.50	22.55	qs24.40	26.40	29.95	s38.40	s40.25	s35.20	35.90	37.70	38.50	40.30	40.90	48.10	c49.50	51.15	53.60	54.30	56.60	62.75	63.65	66.55	92.50	89.00
	Gray Tubes	2.90	2.95	3.20	3.45	3.60	3.75	4.15	4.40	4.90	5.05	5.20	5.35	5.55	5.70	5.85	6.55	6.75	6.80	6.95	7.05	7.35	8.25	8.40	8.50	8.95	9.10
	Blackline Red Tubes	3.35	3.55	3.85	4.15	4.35	4.40	4.65	4.90	5.45	5.60	5.70	5.95	6.20	6.40	6.50	7.30	7.30	7.60	7.70	7.90	8.15	9.15	9.30	9.50	9.90	10.20
REVERE	Plain	13.25	13.80	.....	17.95	18.85	20.80	27.15	.....	.....	27.45	28.00	29.30	30.05	36.20	31.90	.....	.....	40.45	42.25	42.90	44.65	48.20	56.25	51.10	.....	.....
	Anti-Skid Casings	15.25	14.50	.....	18.80	19.80	21.85	28.45	.....	.....	28.80	29.35	30.80	31.50	38.00	33.50	.....	.....	42.45	44.35	45.05	46.85	50.60	59.05	53.70	.....	.....
	Gray Tubes	2.85	3.00	.....	3.75	3.85	4.00	4.30	.....	.....	4.85	5.00	5.15	5.25	5.45	5.65	.....	.....	6.45	6.60	6.85	7.10	8.00	8.15	8.30	.....	.....
	Red Tubes	3.65	3.75	.....	4.65	4.80	4.90	5.35	.....	.....	6.00	6.05	6.15	6.25	6.55	6.65	.....	.....	8.10	8.25	8.40	8.50	9.65	9.90	10.10	.....	.....
REYNOLDS	Plain	.....	17.50	.....	21.90	.....	24.90	27.50	.....	.....	31.60	33.90	35.10	36.10	37.70	38.80	44.55	45.65	47.60	48.85	49.60	49.90	57.50	58.90	59.75	70.30	72.80
	Non-Skid	.....	24.40	.....	29.80	.....	31.60	34.65	.....	.....	40.10	41.45	42.70	44.60	45.70	46.80	54.80	55.90	57.75	58.45	59.70	60.90	67.70	68.50	69.75	90.50	93.25
	Para Tubes	.....	3.75	.....	5.25	.....	5.50	6.00	.....	.....	7.25	7.50	7.50	8.00	8.00	8.50	9.50	10.00	10.00	10.00	10.50	10.75	10.00	11.50	12.50	13.75	14.75
SAVAGE	Plain	qs12.00	qs12.65	16.45	qs16.05	qs16.85	18.40	20.45	c25.75	s26.65	qs23.80	24.70	25.60	26.05	27.25	28.50	.....	c34.90	c36.35	c37.60	c38.20	c39.40	c42.75	c43.25	c45.00	cs67.40	cs59.90
	Non-Skid	qs14.20	qs15.20	19.80	qs19.30	qs20.25	22.00	24.75	c29.80	s31.25	qs27.85	28.30	29.30	29.85	31.30	32.80	.....	c39.20	c41.40	c43.15	c43.95	c46.30	c46.45	c49.45	c51.15	cs77.10	cs68.20
	Grafinite Tubes	3.15	3.25	3.50	3.95	4.10	4.25	4.50	4.90	5.20	5.15	5.35	5.40	5.45	5.55	5.65	.....	6.55	6.80	6.90	7.15	7.30	8.05	8.30	8.40	9.90	10.05
SCHAVOIR	Gray Tubes	3.05	3.10	3.40	3.75	3.80	3.85	4.55	4.80	4.95	4.75	4.85	5.00	5.15	5.80	5.50	6.50	6.15	6.25	6.45	6.65	6.90	7.80	8.00	8.10	10.00	9.45
	Red Tubes	3.10	3.35	3.80	4.20	4.25	4.30	5.00	5.35	5.50	5.30	5.40	5.55	5.70	6.00	6.10	7.20	6.80	7.00	7.15	7.35	7.65	8.60	8.70	8.95	11.10	10.50
	Jumbo Red Tubes	.....	.....	.....	.....	.....	.....	.....	.....	.....	6.70	6.90	7.05	7.15	7.35	7.50	.....	8.40	8.80	9.05	9.20	9.40	10.90	11.10	11.25	.....	13.15
SEMPLE	Semco Red Tubes	3.60	3.75	3.90	4.50	4.60	4.75	5.05	.....	.....	6.05	6.20	6.40	6.60	6.75	6.95	7.95	8.20	8.35	8.50	8.70	8.90	9.85	10.05	10.35	11.00	11.30
SOUTHERN	Plain	qs9.60	qs9.90	.....	q12.75	qs13.70	15.00	c16.80	.....	.....	.....	qc20.00	c21.50	c21.90	c22.70	c23.05	.....	.....	.....	c31.10	c31.60	c32.60	.....	qc37.80	c39.10	.....	.....
	S Non-Skid	.....	qs11.20	.....	q14.90	qs16.75	.....	.....	.....	.....	.....	qc22.75	c23.80	c24.35	.....	c25.45	cs32.25	.....	qc33.60	c34.90	c35.25	c36.50	qc41.50	.....	c43.60	.....	.....
	Red Tubes	2.75	2.90	.....	3.35	3.45	3.50	3.65	.....	.....	.....	4.75	4.90	5.00	5.10	5.25	5.95	.....	6.15	6.25	6.35	6.50	7.20	7.35	7.50	.....	.....
SPEEDWAY	Non-Skid	.....	qs18.66	.....	qs23.33	.....	c30.00	c37.33	.....	.....	qs34.99	c36.40	c37.80	c39.20	.....	c42.00	.....	qc53.33	c53.33	c54.66	c56.00	qc59.33	qc68.60	qc70.00	qc70.00	.....	.....
	Red Tubes	4.33	4.46	.....	5.66	6.00	6.33	6.66	6.98	6.98	7.33	7.66	8.00	8.33	8.66	9.00	.....	9.69	9.85	10.08	10.40	10.77	12.00	12.66	13.33	14.66	15.33
STANDARD FOUR	Super Tread	14.10	14.70	.....	18.70	20.45	22.10	.....	.....	.....	29.10	29.65	31.35	31.85	.....	.....	.....	.....	43.65	45.20	45.95	47.80	53.20	.....	56.05	.....	.....
	Non-Skid	15.10	15.70	.....	20.00	.....	23.60	.....	.....	.....	31.55	32.10	33.90	35.40	.....	36.90	.....	.....	46.75	48.60	49.20	51.05	59.95	.....	63.10	.....	.....
	Gray Tubes	2.85	2.90	.....	3.45	3.60	3.75	3.95	.....	.....	4.60	4.85	5.05	5.20	5.35	5.45	.....	6.40	6.50	6.70	6.95	7.10	7.70	7.90	8.15	.....	9.45
	Red Tubes	3.30	3.40	.....	4.15	4.25	4.40	4.65	.....	.....	5.50	5.65	5.90	6.15	6.30	6.45	.....	7.15	7.30	7.45	7.70	7.85	8.65	8.85	9.00	.....	10.80
STAR	Ribbed Tread	.....	22.00	.....	qs26.50	.....	c30.45	.....	.....	.....	.....	qc39.20	qc40.50	c41.75	.....	.....	c48.90	qc50.50	c52.10	c53.70	c55.30	.....	c63.85	cs66.05	c68.25	cs86.00	.....
	All Star Non-Skid	.....	.....	.....	qs29.00	.....	c32.10	.....	.....	.....	.....	qc41.00	qc42.25	c43.70	.....	c46.40	c50.25	qc51.85	c53.50	c55.00	c56.60	cs58.20	c66.00	cs68.20	c70.40	cs88.50	cs94.00
	Pure Gum Tubes	.....	3.65	.....	4.70	4.90	5.10	5.40	.....	.....	5.95	6.10	6.30	6.45	6.65	6.80	7.60	7.80	8.00	8.20	8.45	8.65	9.80	9.65	10.00	11.60	11.65
STERLING	Sterling High Bar Non-Skid	qs17.46	q20.80	.....	qs26.67	.....	cs29.81	.....	.....	.....	qs34.76	c43.64	c45.10	c46.55	.....	cs49.46	cs58.19	c59.65	c61.10	c62.56	c64.00	c65.46	c72.73	c74.20	c77.10	cs81.46	cs84.38
	Sterling Seamless Red Tubes	3.71	3.97	4.28	5.40	5.50	5.66	6.05	6.31	6.29	6.47	6.59	6.83	7.02	7.14	7.38	8.11	8.40	8.65	8.89	9.13	9.44	10.46	10.70	10.89	12.46	12.83
STRONGHOLD	Plain	.....	17.20	.....	22.05	23.50	25.45	28.55	.....	.....	32.60	33.30	34.65	35.35	37.10	37.70	.....	41.15	42.35	43.70	44.90	46.15	52.30	53.85	55.30	.....	.....
	Stronghold Non-Skid	.....	18.85	.....	24.15	25.45	27.75	31.25	.....	.....	35.70	36.25	37.95	38.70	40.60	41.15	45.50	47.10	48.75	50.35	54.20	56.60	60.70	61.45	63.90	.....	.....
	Gray Tubes	.....	3.60	.....	4.40	4.45	4.55	4.85	.....	.....	5.90	6.05	6.30	6.50	6.70	6.90	7.70	7.90	8.05	8.20	8.35	8.60	9.65	9.80	10.05	.....	.....
	Red Tubes	.....	3.95	.....	4.80	4.85	5.00	5.20	.....	.....	6.55	6.75	6.95	7.10	7.30	7.55	8.25	8.40	8.55	8.70	9.10	9.25	10.40	10.55	10.75	.....	.....
SWINEHART	Plain	qs14.00	qs15.10	qs19.20	s19.20	qs20.60	22.40	25.40	s28.50	.....	qs29.85	30.50	32.00	32.70	c34.25	34.75	s40.80	s42.00	43.45	c45.45	46.15	cs48.10	c53.30	s54.10	56.50	cs79.05	cs74.20
	Ribbed	qs15.70	qs16.80	qs21.35	s21.35	qs23.00	25.00	28.30	s31.70	.....	qs33.30	34.00	35.70	36.45	c38.10	38.70	s45.45	s46.90	48.40	c50.60	51.40	cs53.60	c63.50	s64.35	67.20	cs92.40	cs88.00
	Non-Skid	qs16.40	qs17.60	qs22.40	s22.40	qs24.15	26.25	29.75	s33.35	.....	qs34.90	35.70	37.45	38.30	c40.05	40.65	s47.70	s49.30	50.80	c53.15	53.95	cs56.30	c66.65	s67.60	70.55	cs97.25	cs92.65
	Tubes	2.90	3.00	3.20	3.40	3.55	3.60	3.80	3.95	.....	4.70	4.85	5.00	5.10	5.20	5.30	6.20	6.30	6.35	6.45	6.60	6.80	7.75	7.90	8.05	8.40	8.60
TEN BROECK	Plain	qs12.39	qs13.09	qs16.63	q16.56	qs17.39	19.16	21.37	.....	.....	qs25.60	25.99	27.19	27.69	28.77	29.09	.....	.....	c38.00	39.46	39.90	41.42	s46.55	s47.11	s47.68	.....	cs64.00
	Non-Skid	qs13.91	qs14.86	.....	q19.48	qs20.42	22.26	25.16	.....	qs29.21	qs30.48	31.05	32.63	33.33	34.91	35.47	.....	.....	c43.13	45.19	45.72	46.46	cs51.16	s51.98	54.14	.....	cs74.56
	Ribbed	.....	qs14.86	.....	q19.48	qs20.42	22.26	.....	.....	.....	qs30.48	31.05	32.63	33.33	.....	.....	.....	.....	43.13	45.19	.....	.....	s51.16	s51.98	.....	.....	s74.56
	Gray Tubes	3.02	3.14	3.32	3.56	3.68	3.75	3.92	4.11	4.77	4.89	5.08	5.20	5.32	5.44	5.56	6.46	.....	6.65	6.77	6.89	7.07	8.10	8.22	8.40	9.00	9.13
THERMOID	Non-Skid and Ribbed Tread	qs23.15	qs23.30	.....	qs29.30	qs31.30	c33.65	c36.65	.....	.....	qs40.65	c42.05	c43.25	c44.80	c45.45	c48.35	cs53.90	.....	c53.60	c55.90	c59.30	c61.00	c68.00	c70.30	c72.90	cs90.05	cs96.60
	Brown and DeLuxe Red Tubes	3.55	3.70	.....	4.75	4.90	5.05	5.45	.....	.....	5.95	6.05	6.25	6.50	6.60	6.75	7.70	.....	8.05	8.20	8.55	8.80	9.60	9.85	10.20	11.65	11.90
TYRIAN	Plain	qs14.30	s16.00	cs17.60	s20.00	qs21.15	c23.05	c26.10	.....	cs29.00	qs30.60	c31.35	c32.90	c33.65	c35.15	c35.70	.....	.....	c44.70	c46.70	c47.35	c49.30	c52.00	c52.85	c55.25	cs73.80	cs76.10
	Holdtite Non-Skid	qs15.60	s17.30	cs18.85	s22.10	qs 23.25	c25.10	c28.15	.....	cs31.80	qs33.30	c34.05	c35.65	c36.30	c37.90	c38.45	.....	.....	c48.10	c50.10	c50.75	c52.75	c55.50	c56.25	c58.65	cs79.90	cs82.25

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Name	Trade Name and Tread	28x3	30x3	32x3	30x3½	31x3½	32x3½	34x3½	36x3½	30x4	31x4	32x4	33x4	34x4	35x4	36x4	32x4½	33x4½	34x4½	36x4½	37x4½	36x5	37x5	37x5½	36x5½
TYRIAN (Continued)	Tourist Gray Tubes	2.75	2.85	3.00	3.35	3.45	3.55	3.75	.....	4.35	4.50	4.65	4.80	4.95	5.15	5.30	.....	.....	.....	6.30	6.45	7.55	7.65	8.30	3.40
	Tourist Red Tubes	3.10	3.20	3.30	3.75	3.85	3.95	4.15	.....	4.85	5.00	5.15	5.33	5.50	5.65	5.85	.....	.....	.....	6.85	7.15	8.40	8.50	9.15	9.30
	Extra-Heavy Gray Tubes	3.15	3.30	3.50	3.75	3.80	3.90	4.15	.....	5.00	5.15	5.35	5.45	5.60	5.75	5.90	.....	.....	.....	7.10	7.25	8.55	8.75	9.40	9.55
	Extra-Heavy Red Tubes	3.50	3.65	3.80	4.15	4.25	4.35	4.65	.....	5.60	5.75	5.90	6.06	6.20	6.35	6.50	.....	.....	.....	7.90	8.06	9.65	9.75	10.40	10.60
UNITED STATES	Plain	13.25	13.80	16.85	17.95	18.85	20.80	27.15	30.25	33.75	27.45	28.00	29.30	30.95	36.20	31.90	43.80	39.15	40.40	43.25	44.05	56.25	51.10	70.90	91.45
	Usco Non-Skid	15.25	14.50	17.70	18.80	19.80	21.85	28.45	.....	.....	28.80	29.35	30.80	31.50	38.00	33.50	46.00	41.10	42.45	44.35	46.85	59.05	53.70	73.80	92.40
	Chain Non-Skid	16.50	16.40	19.95	21.35	22.75	24.55	31.90	35.60	41.10	33.40	34.10	35.90	36.65	44.15	38.95	52.70	47.15	48.75	50.95	53.85	67.65	61.25	91.45	9.65
	Nobby Non-Skid	20.70	22.10	28.30	28.70	30.25	33.00	43.05	47.80	.....	40.00	40.80	42.85	43.65	49.85	46.60	58.20	55.20	57.10	59.65	61.00	71.25	74.30	98.30	10.60
	Royal Cord Non-Skid	.....	.....	.....	.....	.....	39.45	.....	.....	.....	.....	50.15	51.40	52.85	.....	55.90	56.30	57.95	59.60	61.00	63.40	75.65	77.40	.....	83.50
	Gray Tubes	2.85	3.00	3.15	3.75	3.85	4.00	4.30	4.50	4.70	4.85	5.00	5.15	5.25	5.45	5.65	6.15	6.40	6.45	6.85	8.00	8.15	8.30	9.25	9.40
	Red Tubes	3.65	3.75	4.00	4.65	4.80	4.90	5.35	5.45	5.85	6.00	6.05	6.15	6.25	6.55	6.65	7.90	8.00	8.10	8.40	8.50	9.90	10.10	11.10	11.25
VICTOR	Plain	17.10	18.05	.....	22.25	.....	25.85	.....	.....	.....	34.55	35.15	36.70	37.30	38.90	39.30	.....	.....	46.50	48.00	48.85	60.70	60.60	.....	.....
	Ribbed	.....	18.90	.....	23.45	.....	27.20	.....	.....	.....	36.25	37.90	38.50	39.20	.....	.....	.....	.....	48.90	50.95	51.40	.....	63.75	.....	.....
	Non-Skid	19.10	20.25	.....	25.15	28.15	28.85	.....	.....	.....	38.72	39.40	41.10	41.90	43.55	44.00	53.10	53.35	53.90	55.00	67.75	68.00	68.75	91.45	92.40
	Victor Gray Tubes	3.10	3.30	.....	3.85	4.15	4.25	.....	.....	.....	5.20	5.30	5.45	5.60	5.85	6.00	6.60	6.95	7.10	7.25	7.60	8.50	8.65	8.85	9.65
	Victor Red Tubes	3.40	3.60	.....	4.25	4.80	4.90	.....	.....	.....	5.75	5.95	6.10	6.30	6.45	6.60	7.70	7.75	7.90	8.15	8.30	9.40	9.80	9.90	10.75
	Springfield Tubes	4.25	4.50	.....	5.55	5.70	5.80	.....	.....	.....	6.75	6.90	7.10	7.25	.....	7.55	.....	8.85	9.05	9.30	9.50	10.55	10.80	12.80	13.45
	Springfield Red Tubes	4.60	4.85	.....	6.00	6.10	6.20	.....	.....	.....	7.30	7.40	7.60	7.75	.....	8.15	.....	9.60	9.80	10.05	10.25	11.40	11.60	13.90	14.55
VITALIC	Non-Skid	.....	14.25	.....	18.50	.....	21.60	.....	.....	.....	28.25	28.90	30.25	30.95	.....	30.25	.....	.....	7.20	7.35	7.55	7.85	8.90	9.20	10.75
	De Luxe Gray Tubes	3.15	3.26	3.47	3.78	3.89	3.99	4.20	4.36	4.99	5.09	5.25	5.41	5.51	5.67	6.20	6.25	6.53	7.95	8.10	8.35	8.65	9.80	10.15	11.85
	De Luxe Red Tubes	3.52	3.62	3.78	4.36	4.46	4.57	4.83	4.99	5.51	5.62	5.83	5.99	6.09	6.20	6.72	6.83	7.61	8.51	8.40	8.82	8.93	10.13	11.39	11.87
	Black Tubes	3.94	4.04	4.25	4.94	5.09	5.20	5.57	5.78	6.20	6.41	6.51	6.63	6.72	6.98	7.09	8.15	7.51	8.40	8.66	8.82	8.93	10.13	11.56	11.66
VULCAN	Gray Tubes	3.30	3.35	.....	4.15	4.25	4.40	5.20	.....	.....	5.40	5.55	5.70	5.85	6.25	6.30	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Indian Red Tubes	3.65	3.70	.....	4.60	4.65	4.80	5.75	.....	.....	5.95	6.15	6.30	.....	6.90	6.95	.....	.....	.....	.....	.....	.....	.....	.....	.....
WILSON	Wearwell Plain	.....	.....	q12.20	.....	q15.85	.....	.....	.....	.....	.....	q24.75	.....	q26.50	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Wearwell Non-Skid	q12.55	.....	q12.80	.....	q16.60	q17.55	.....	.....	.....	q25.45	q26.00	27.15	q27.85	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Wearwell Gray Tubes	q13.15	3.10	.....	3.05	3.75	3.80	3.85	.....	.....	4.75	4.85	5.00	5.15	.....	5.50	.....	.....	6.25	6.45	.....	7.80	8.10	9.25	.....
	Wearwell Red Tubes	3.40	3.35	.....	4.20	4.25	4.30	.....	.....	.....	5.30	5.40	5.55	5.70	6.45	6.10	.....	.....	7.00	7.15	7.65	8.70	8.95	10.30	.....
	Wilson Non-Skid	.....	.....	.....	.....	.....	.....	.....	.....	.....	qc49.25	qc53.90	.....	.....	.....	.....	.....	.....	.....	qc65.45	qc67.75	qc78.75	qc82.55	qc90.00	.....	.....
	Wilson Gray Tubes	3.40	3.35	.....	4.20	4.25	4.30	.....	.....	.....	5.30	5.40	5.55	5.70	6.45	6.15	.....	.....	7.00	7.15	7.35	8.50	8.70	9.40	.....
	Wilson Red Tubes	3.70	3.65	.....	4.60	4.85	4.90	.....	.....	.....	6.00	6.06	6.10	6.20	7.09	6.70	.....	.....	7.70	7.85	8.05	9.35	9.65	9.75	10.40
WOODWORTH	Plain	qs18.55	qs19.70	.....	qs26.50	qs27.35	28.50	30.45	.....	.....	qs37.70	c39.15	c40.50	c41.75	c43.00	c44.30	.....	.....	c56.65	c58.45	c60.05	c61.90	c67.90	c70.00	c72.00
	Non-Skid	qs20.55	qs22.00	.....	qs29.30	qs30.60	31.90	33.15	.....	.....	qs42.50	c44.00	c45.55	c47.10	c48.55	c50.10	.....	.....	c63.75	c65.80	c67.60	c69.60	c76.40	c78.70	c80.95
	Tubes	3.90	4.00	.....	4.40	4.55	4.65	4.95	.....	.....	6.35	6.60	6.70	6.80	6.90	7.10	.....	.....	8.65	8.90	9.20	9.40	10.00	10.35	10.85
ZEE-ZEE	"Z" Tread	20.73	21.57	22.75	25.38	25.80	27.40	30.05	.....	31.99	32.83	34.37	35.62	36.39	37.71	38.89	47.82	48.42	49.33	50.09	52.04	53.70	56.22	57.95	58.86
	Tubes	3.81	4.11	4.35	4.72	4.83	4.94	5.05	.....	6.04	6.16	6.28	6.58	6.80	6.89	7.06	8.10	8.29	8.41	8.45	8.69	8.95	10.67	10.77	11.23

Name	Trade Name and Tread	37x5½	36x5½	38x5½	37x6	38x6	40x6	42x6	44x6	46x6	48x6
TYRIAN (Continued)	Tourist Gray Tubes	7.65	7.55	7.45	7.65	7.55	8.30	8.45	8.60	8.75	9.40
	Tourist Red Tubes	8.30	8.40	8.25	8.35	8.40	9.15	9.30	9.45	9.60	10.35
	Extra-Heavy Gray Tubes	8.40	8.55	8.40	8.55	8.55	9.40	9.55	9.70	9.85	10.60
	Extra-Heavy Red Tubes	9.75	9.65	9.40	9.75	9.65	10.40	10.60	10.75	10.95	11.75
UNITED STATES	Plain	91.45	56.25	48.20	51.10	56.25	70.90	72.40	73.90	75.40	77.00
	Usco Non-Skid	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Chain Non-Skid	92.40	59.05	50.60	53.70	59.05	73.80	75.40	77.00	78.60	80.25
	Nobby Non-Skid	9.65	67.65	57.85	61.25	67.65	91.45	93.45	95.45	97.45	99.50
	Royal Cord Non-Skid	100.75	71.25	61.25	74.30	71.25	91.45	98.30	100.50	102.70	104.90
	Gray Tubes	10.60	75.65	70.20	77.40	75.65	98.30	100.50	102.70	104.90	107.15
	Red Tubes	13.45	8.15	8.00	8.30	8.15	9.25	9.40	9.55	9.70	9.85
VICTOR	Plain	14.55	9.90	9.65	10.10	9.90	11.10	11.25	11.40	11.55	11.70
	Ribbed	.....	.....	.....	60.60	.....	.....	.....	.....	.....	.....
	Non-Skid	.....	61.45	60.65	63.75	61.45	.....	.....	.....	.....	.....
	Victor Gray Tubes	9.29	68.05	67.75	71.40	68.75	91.45	93.45	95.45	97.45	99.50
	Victor Red Tubes	11.39	8.65	8.50	8.85	8.65	9.35	9.55	9.75	9.95	10.15
	Springfield Tubes	11.87	9.80	9.40	9.80	9.80	10.60	10.80	11.00	11.20	11.45
	Springfield Red Tubes	14.55	11.60	10.55	11.00	11.60	13.90	14.15	14.40	14.70	15.00
VITALIC	Non-Skid	10.75	9.20	8.90	9.20	9.05	10.55	10.75	10.95	11.15	11.40
	De Luxe Gray Tubes	11.85	10.15	9.80	10.15	10.10	11.60	11.85	12.05	12.30	12.55
	De Luxe Red Tubes	9.29	8.35	8.09	8.35	8.19	9.50	9.65	9.85	10.00	10.20
	Black Tubes	11.39	9.56	9.24	9.56	9.35	11.13	11.30	11.50	11.75	11.95
	Gray Tubes	11.87	10.66	10.13	10.66	10.34	11.66	11.87	12.10	12.30	12.55
	Indian Red Tubes	.....	.....	.....	52.75	.....	.....	.....	.....	.....	.....
WILSON	Wearwell Plain	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Wearwell Non-Skid	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Wearwell Gray Tubes	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Wearwell Red Tubes	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Wilson Non-Skid	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Wilson Gray Tubes	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Wilson Red Tubes	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
WOODWORTH	Plain	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Non-Skid	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Tubes	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
ZEE-ZEE	"Z" Tread	58.86	57.95	56.22	53.70	52.04	50.09	49.33	48.42	47.52	46.62
	Tubes	11.23	10.77	10.67	8.95	8.69	8.45	8.41	8.29	8.10	7.98

Women Factory Workers in Detroit Increasing

Statistics Show Increase of Female Employees Almost Three Times That of Men

DETROIT, Oct. 27—Although there has been a great increase in the number of men employed in Detroit factories and workshops, the women so employed are increasing almost three times as fast as the men, according to statistics compiled by Labor Commissioner Richard H. Fletcher, in factories employing more than 500 persons. Commissioner Fletcher gives the following comparative figures:

	May 1916	May 1917	Increase Per Cent
Men	82,359	88,125	7.0
Women	6,029	7,095	17.6
Daily wages	$284,071	$355,942	12.0

The number of female employees increased as follows:

	1916	1917
Female superintendents	1	2
Foreladies	44	64
Under 16	17	46
Over 16, in offices	1,725	2,160
Other women employed	4,242	4,813

The daily wages paid women, all classes, show these increases:

Superintendents	$3.20
Foreladies	45.25
Girls under 16	51.60
Over 16, in offices	1,428.96
Over 16	1,748.10

The number of men employed showed these changes:

	Increase
Superintendents	25
Foremen	641
Boys, under 16	18
Over 16, unskilled labor	5,664
	Decrease
Boys between 16 and 18	1
Over 18, in offices	12
Over 18, skilled labor	569

Ordnance Department Issues Weight of Metal Equipment of Soldier

WASHINGTON, Nov. 3—The ordnance department of the army has prepared a memorandum showing that the metal equipment carried by each infantry soldier in the army weighs 294.65 ounces. To this 114.7 ounces are added by equipment of cotton, wool, leather and wood. This memorandum shows the specific weight in ounces, also, as follows, this being exclusive of that furnished by the Quartermaster Corps:

	Ounces
Bacon can	8.4
Bayonet	16.0
Bayonet scabbard	7.5
Canteen	6.8
Canteen cover	5.0
Cartridges (100)	95.8
Cartridge belt	24.1
Condiment can	4.3
Cup	6.1
Fork	1.5
Front sight cover	2.0
Gun sling	8.0
Haversack	25.8
Knife	1.7
Meat can	12.4
Oiler and thong case	3.0
Pack carrier	7.3
Pouch for first aid packet	1.9
Rifle	136.0
Shovel	29.0
Shovel carriers	5.0
Spoon	1.7
Total	409.3

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Repairshop Shortcuts

From The Motor World Roadman

No. 1425—TIME CARD SYSTEM

Where the number of workmen is large, it is essential that the foreman be able to see each of the time cards at a glance so that he can determine whether all the men are working, how much work each man has on hand, and the job number that the man is working on. For this purpose racks placed along the rear of the foreman's bench and having the front strips of plate glass permits this thing to be readily done. The strips of glass are held in place by wooden end pieces, and similar wooden strips divide the rack into compartments for the individual workman's time cards. The glass being transparent, it is unnecessary to remove the cards to see upon which job the workman is working.—Willys-Overland Service Station, New York.

No. 1426—GRINDING CLUTCH PLATES

On the older Peerless models a disk clutch was used, and it was occasionally necessary to reface the disks. This can readily be done in a lathe with a special grinder. This grinder comprises simply a Y-shaped handle held in the tool post, and carrying the spindle on babbitt bearings. All end thrust is cared for by bronze thrust washers at the outer end of the spindle shaft. A small round leather belt is used to drive the grinder and is carried from an overhead shaft.—J. S. Perkins, Dodge Brothers, Pittsburgh.

No. 1427—PREHEATING FURNACE

It is necessary that engine cylinders be preheated to a dull red heat before welding to prevent warping and subsequent cracking. The usual method is to place the cylinder on a concrete floor and build a temporary brick preheating furnace around it. The work of welding, however, may be done much quicker by constructing a permanent furnace on the top of an ordinary blacksmith's forge. The cylinder to be preheated is placed in the furnace, charcoal placed around it and the fire started. The cylinder requires no further attention for about 2 hours, when it is ready for welding.—Willys-Overland Service Station, New York.

No. 1428—STEERING SPINDLE JIG

Steering spindles may be quickly tested and straightened in an ordinary engine lathe, but this is not always expedient. By the use of a special jig attached to the bench the spindles may be tested and straightened with the smallest possible loss of time. This jig is simply a piece of 3 x 1-in. stock, bent U-shape and bolted to the bench. A fixed lathe center is attached to one of the arms, and an adjustable center to the other. The spindles to be tested are swung between these centers and the high point noted by means of a planer gage. After finding the point of bend, the spindle may be readily straightened.—Willys-Overland Service Station, New York.

No. 1429—CYLINDER REGRINDING FIXTURE

Though this fixture was designed for regrinding Pierce-Arrow cylinders, it may readily be adapted to similar work on any cylinders that are cast singly or in pairs. The cylinder block is bolted to a cast iron plate, that is in turn attached to a special face plate, so arranged that the cylinder block falls with the arms of the plate. The cast iron plate has several holes for attachment to the face plate, so that it may be offset, permitting either one of the cylinders to be ground. The grinding head is simply a 2-in. bar stock, held in the tool rest, and carrying the grinding spindle on ball bearings in the usual manner. The wheel is driven by a small electric motor that is mounted on the compound rest. A fixture of this nature has been in use for nearly 2 years, and has proved entirely satisfactory.—C. F. Mohr, Pierce-Arrow Service Station, Pittsburgh.

No. 1430—BUICK CLUTCH COMPRESSOR

When removing the clutch from older Buick models it is usually necessary to remove the clutch spring. On replacement this spring must be compressed and the retaining nut fastened in place. By the use of a special clamp the clutch spring may be held in a compressed position after the clutch is removed, thus removing the necessity of compressing the clutch spring on replacement. This clamp comprises an L-shaped member, having a stud that fits into the holes at the side of the clutch hub and a pressure screw that holds the ball race in position. Two of these clamps are necessary in each case.—W. J. Stewart, Buick Motor Co., Pittsburgh.

No. 1431—SERVICE CAR CRANE

Cars disabled by broken front wheels or axles may be brought into the repairshop by means of a crane attached to the rear end of the service car. This crane comprises a heavy iron support, resting on the rear cross member, and carrying a grooved idler pulley overhanging the rear end of the car. The support is rigidly held in place by a tie rod that is attached to a reinforced cross member at the middle of the car. A small gear hoist, placed near the driver's seat, and operated by a crank, is used to raise the front end of the wrecked car from the ground. Even when the front end of the towed car is not wrecked, the use of the crane removes the necessity of having a steersman in the towed car.—Willys-Overland Co., New York.

No. 1432—SHOP SIGNAL SYSTEM

In the largest service stations it is difficult to keep track of the motions of the men. Many will start work 5 minutes after the starting time and get washed up before closing time. The amount of time lost in this manner amounts to considerable at the end of the year. By the provision of a large whistle, blown by air pressure from the usual air pressure line, a signal may be given at both the start and close of the working period.—C. F. Mohr, Pierce-Arrow Service Station, Pittsburgh.

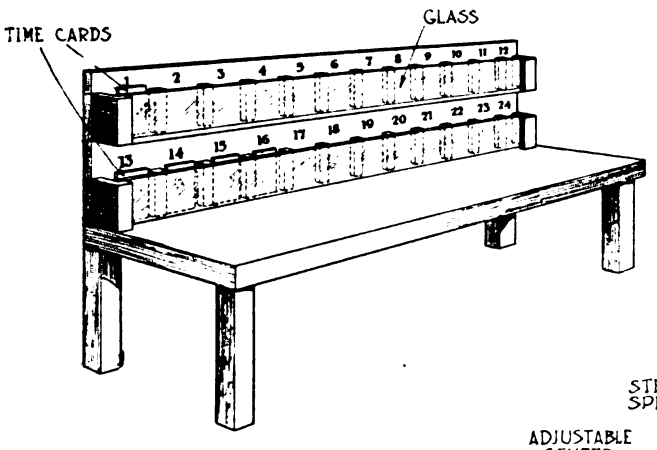
No. 1433—REFITTING STEERING GEARS

After new worm and sector gears have been placed in a steering gear, it is frequently found that high spots on the teeth will cause the gear to work hard in certain places. It is best practice to have the gears fitted right when they leave the shop. Grinding compound may be inserted in the worm and sector gears, and by working the gears back and forth all high spots may be removed. To facilitate the work a special handle, giving additional leverage, may be bolted to the steering wheels as shown.—J. S. Perkins, Dodge Brothers, Pittsburgh.

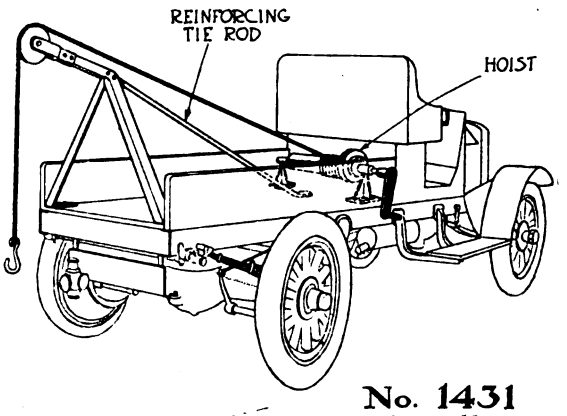
No. 1434—REPAIRSHOP HORSE

The simplicity, strength and durability of this repairshop horse are commendable. It comprises simply two strips of 2-in. angle iron, bent to a U-form and bolted together back to back. A short separating strip is placed between the two backs, and this separator should be about ½ in. thick. This permits bolts to be passed between the strips, and used to hold the work securely in place. Two of these horses may be used as an engine stand, a rear axle stand or in transmission and gearbox work.—Willys-Overland Co., New York.

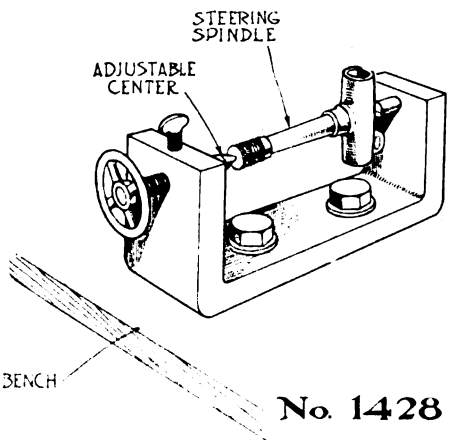
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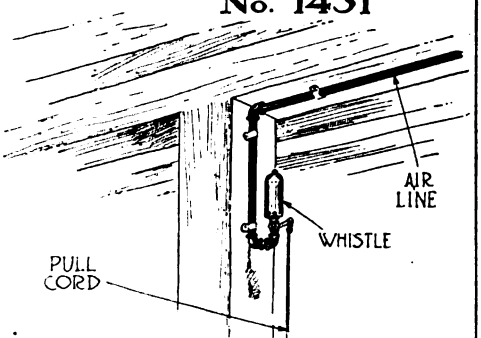
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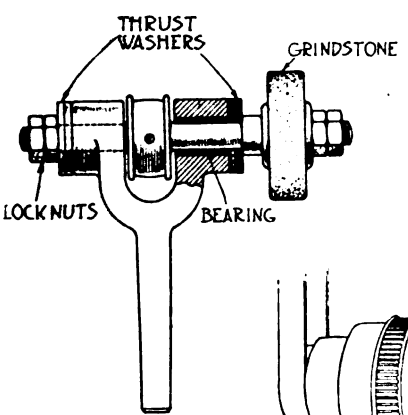
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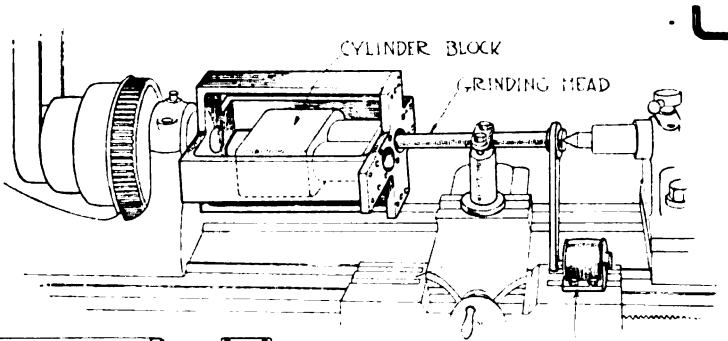
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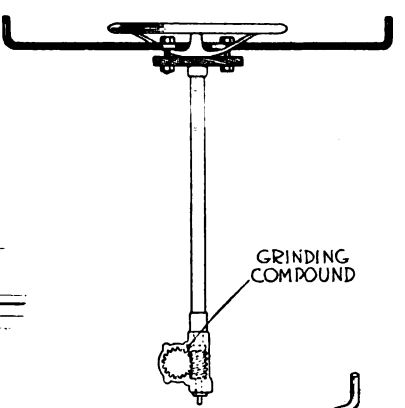


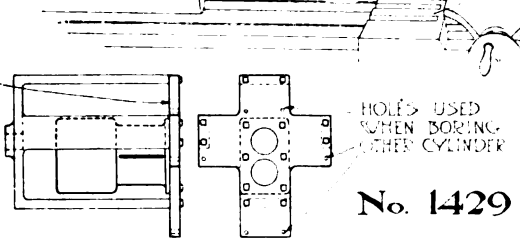
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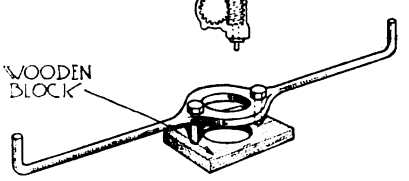
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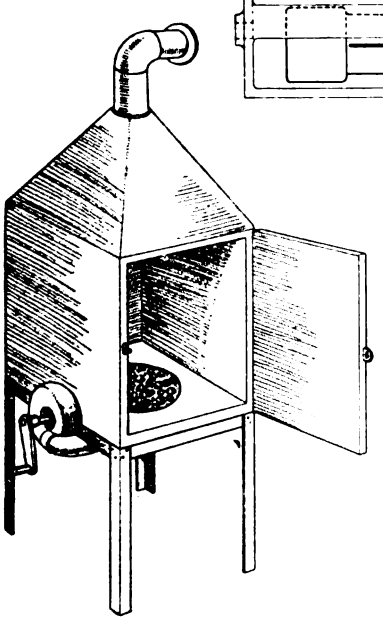




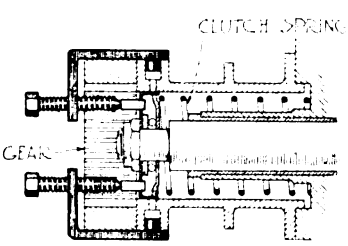
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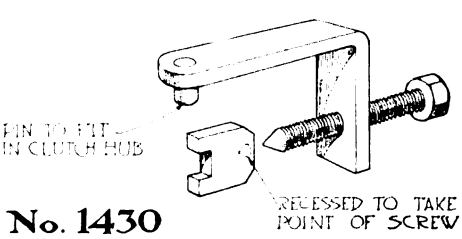


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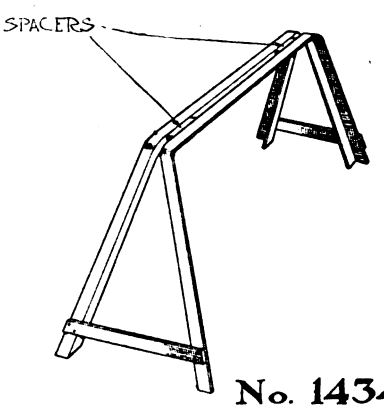


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A Department of

BETTER MECHANICS

No. 42 (Continued)

Truck Maintenance and Repair

Federal 2-Ton Truck

In This Issue { 1—*Axle Adjustments*
2—*Special Tools*

By S. T. Williams

THOUGH the points emphasized in this issue apply specifically to the Federal 2-ton truck, in practically every case they also apply to each of the other Federal models. In general, they also apply to any truck.

In the previous article, methods of inspection, oiling and making engine adjustments were described.

Adjustment of Axles

Adjusting the Worm

This Applies to Timken-Detroit Axles Nos. 6546, 6551-6552, 6650-6652.

THE bearings mounted on either end of the worm shaft are set with a small amount of end play that is taken up by expansion of the worm when the truck is in operation. But when this end play becomes excessive the wear on the bearings is greatly increased, as is the friction loss in the axle. The following is the method of obtaining the correct adjustment of the worm:

1—Loosen the lock retaining bolt, shown in Fig. 7, at the front end of the worm shaft.

2—Remove the adjusting ring lock.

3—Turn the adjusting cup to the right (when facing the back of the truck) until the end play is about .015 in. (This is about 1/64 in.)

The worm is lubricated from the oil carried in the axle housing, and occasionally an axle will leak oil from the forward end of the worm shaft. If this occurs the packing gland nut, shown in Fig. 7, should be drawn up tightly.

Adjusting Differential Bearings

Before the differential bearings can be adjusted, the carrier and driving element must be removed from the rear axle housing, so that the adjustments are accessible. This is the method:

1—Unscrew the nuts holding the rear axle drive shafts in place on the wheel hubs, and by tightening the push screw shown in Fig. 8 force the axle drive shafts free. They should be drawn out about a foot.

2—Disconnect the rear universal by removing the flange bolts and separating the faces.

3—Remove the bolts holding the worm drive carrier in place and lift the entire driving unit from place, as shown in Fig. 10.

4—Loosen the adjustment lock on the left bearing, shown in Fig. 7, and turn the adjusting ring until all but the slightest amount of backlash is removed. *Do not touch the right-hand differential bearing adjustment,* as this will disturb the proper meshing of the worm and gear. Make all adjustments necessary on the left-hand bearing only. The parts may then be reassembled.

As stated, the differential and the worm gear receive lubrication from the oil supply carried in the differential housing. The housing should be filled weekly through and to the level of the filler car at the rear. Any good, high grade of oil, free from acid and grit, and that will stand the zero test, is satisfactory.

It is advisable to occasionally draw off the old oil through the drain plug at the bottom of the housing, to wash the gears with kerosene and to put in new oil. *No lubricant which has solid matter in suspension, graphite, sawdust, cork, asbestos fiber, mica or any other similar products should be used. These clog the oil passages and in-*

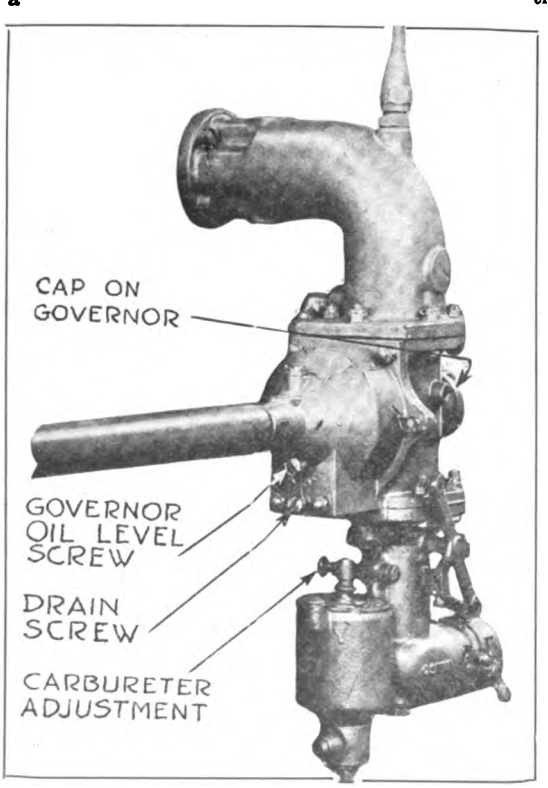


Fig. 6—Both carbureter and governor adjustments are easily accessible

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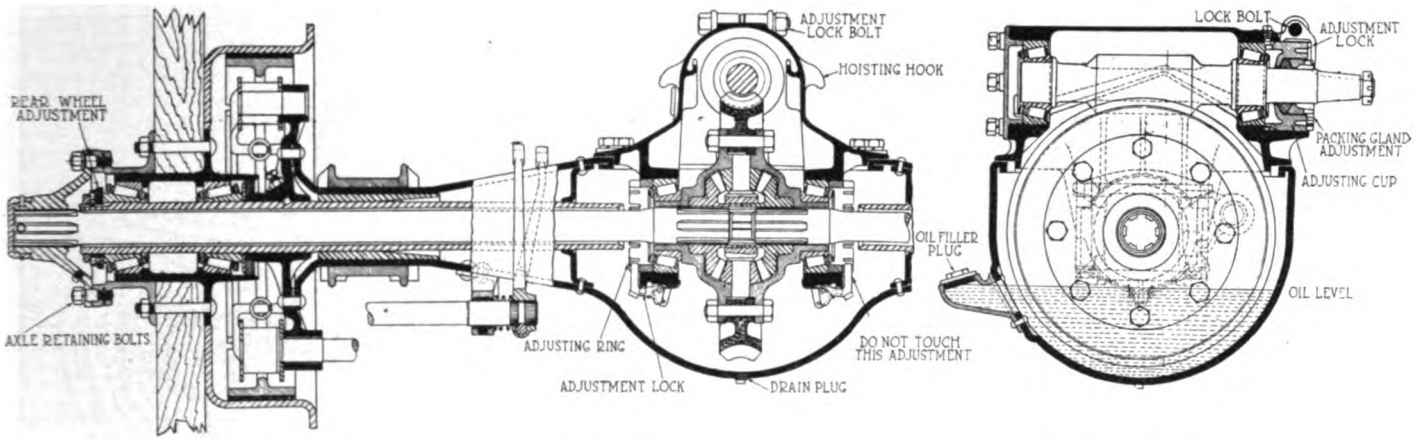


Fig. 7—At the right are shown the points of adjustment of the worm gear, and at the left the adjustments of the differential and of the wheel bearings. In setting the differential adjustment, do not disturb the right hand adjustment—to do so will disturb the mesh of the worm gearing

terfere with the circulation of the lubricant.

As a worm gear normally runs at a higher temperature than a bevel gear, no alarm should be felt if the gear housing becomes as hot as 150 deg. Fahr. in operation. If the adjustments have been made as directed and sufficient lubricant is present, the temperatures reached will not be dangerous.

Removing the Rear Axle

Inasmuch as the worm and differential gears may be readily removed for adjustment, and the wheel bearings may be easily adjusted, it is not often necessary to remove the rear axle housing from the truck. But when this is necessary, it may be done in the following manner. The method, in general, applies to all truck work, and differs considerably from passenger car work. To remove the rear axle housing:

1—Place a jack beneath the rear of the frame after the rear wheels have been hoisted from the ground.

2—Remove the bolts holding the axle drive shafts to the wheel hubs and force the axles free, as shown in Figs. 8 and 9.

3—Remove the lock nuts holding the wheels in place, and by placing a notched bar of stock between the stud on the wheel adjustment stud and the wheel hub bolt unscrew the wheel adjusting nut by turning the wheel. This is shown in Fig. 9. A board, resting on rollers, placed beneath the wheels, permits one man to remove the wheels without the aid of a hoist, Fig. 11.

4—Disconnect the drive shaft at the universal joint flange.

5—Disconnect the brake rods.

6—Using the lifting rig—tool No. 10, Fig. 12—apply a small amount of tension on the rear axle housing.

7—Disconnect springs from frame at bracket holding spring cross-rod by removing the caps in the under side of the brackets.

The axle may now be lowered on to a small truck and rolled from beneath the machine.

Special Federal Tools

TEN special tools, developed to facilitate the work on Federal trucks, are shown in Fig. 12. These tools may be made by any mechanic, and many of them may be adapted to work on any truck.

No. 1—Rear axle nut wrench—The regular wrench, supplied by the manufacturer, is flat and not readily applied to the rear axle nut. The special wrench is offset, permitting ready application.

No. 2—Spring clip tongs—When replacing spring clips the ends often spread, and it is difficult to force them through the openings in the spring seat. By the use of a special pair of tongs, the clip ends may be readily snapped into place.

No. 3—The weekly inspection should include tightening the spring clip nuts. A long-handled, special wrench renders this easy. It is also invaluable in overhauling work.

No. 4—Rear axle nut wrench—This is a more elaborate form of wrench No. 1—a better wrench, but one more difficult to construct.

No. 5—Frame spreader—It is often necessary to spring the frame apart to permit the insertion of bolts or rivets. A 1-in. round rod, fitted with a right-and-left nut, and notched ends, permits the frame to be spread apart to any desired point.

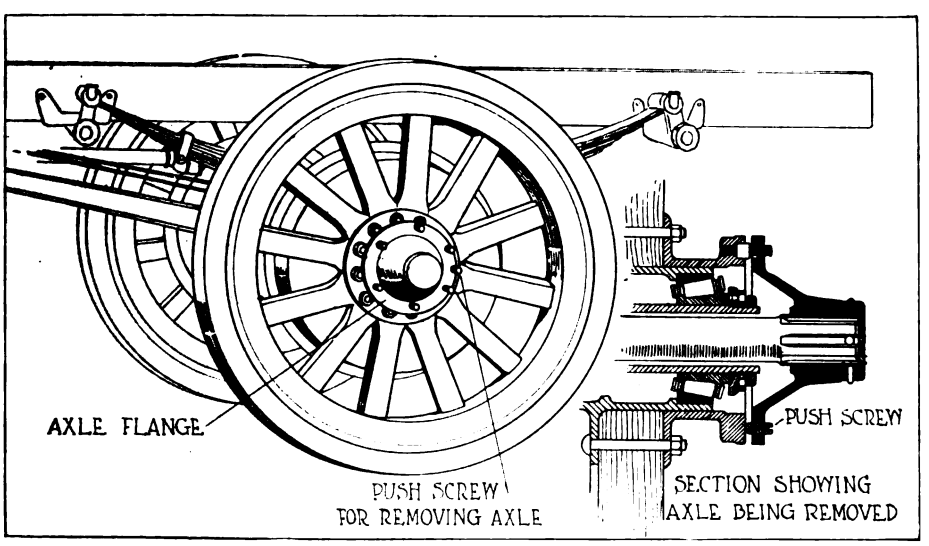


Fig. 8—The odd-spaced screw on the rear wheel hub flanges is for the purpose of pushing the axle shaft free, after the hub flange nuts have been removed

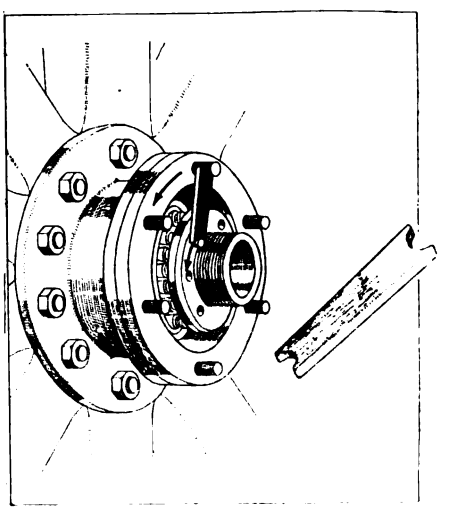


Fig. 9—A short piece of steel notched at each end, caught between the hub flange bolt and the lock pin on the bearing adjusting ring, locks the two together

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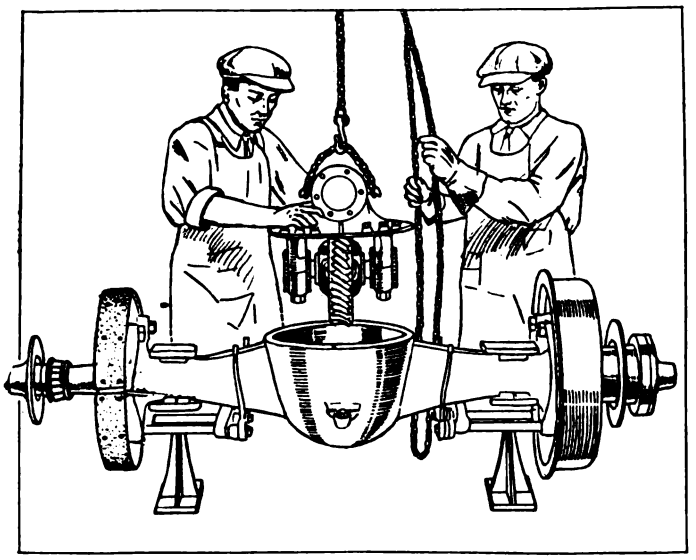


Fig. 10—Hooks at each side of the worm housing are provided for lifting the differential unit from place

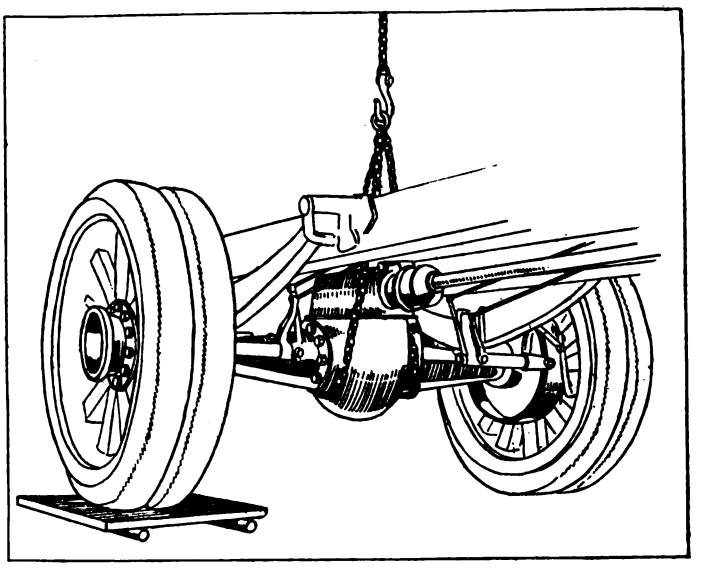


Fig. 11—Rear wheel removal. A chain sling takes weight off wheel, allowing latter to be rolled out

No. 6—Grease cup wrench — This wrench permits the grease cup caps to be filled and replaced with ease, even in accessible places, and is also useful in the daily tightening of the cups.

No. 7—Rear wheel spanner—A special spanner wrench for removing, replacing or adjusting the rear wheel nuts.

No. 8—Reach rod screwdriver—The ordinary screwdriver does not have a wide enough end or sufficient leverage for this work. Hence the advisability of this wide ended, cross handle screwdriver.

No. 9—Borg & Beck clutch wrench—When assembling the clutch in the flywheel, this wrench is used to pry the clutch into the "out" position, permitting the insertion of the retaining blocks.

No. 10—Auxiliary jack—The truck jack must be strong and stable; hence a cast-iron jack of this nature is most practical. Any mechanic may make the pattern, and have several jacks cast in the local foundry.

The Condenser and How to Test It

THE condenser will be found connected across the contact points of the breaker mechanism.

Its use is to prevent the contact points from burning and pitting, and to assist the coil to increase the voltage in the secondary windings.

In construction it comprises strips of tinfoil, insulated from each other by oiled paper. Half of these tinfoil strips are connected to one terminal, and half to the other terminal. Current cannot flow through a condenser, but the condenser has the property of absorbing a certain amount of electricity, and building up the voltage.

Defective condensers not only cause the points to pit with great rapidity, but also cause the ignition system to work poorly, or, more likely, not at all. A condenser test is therefore necessary.

The testing apparatus is simply a 16-candlepower carbon lamp connected to a 110-volt direct current line. The condenser is connected to the two leads, and the ends of the wire snapped together. If the resulting spark is hot, fat, and cracks with a good sharp sound, the condenser is all right. If this does not happen, junk the condenser, and get a new one.

This same test may be made on alternating current, with 110 volts, in the same manner. The test, however, is a little more difficult. By trying the alternating current test a few times on a condenser known to be defective and one known to be right, the mechanic will be able to use the alternating current satisfactorily. Anyone can use direct current.

The testing outfit described for the condenser test will be found invaluable in making all sorts of electrical tests, for short circuits, grounds, and open circuits. Every shop should have one for that purpose alone.

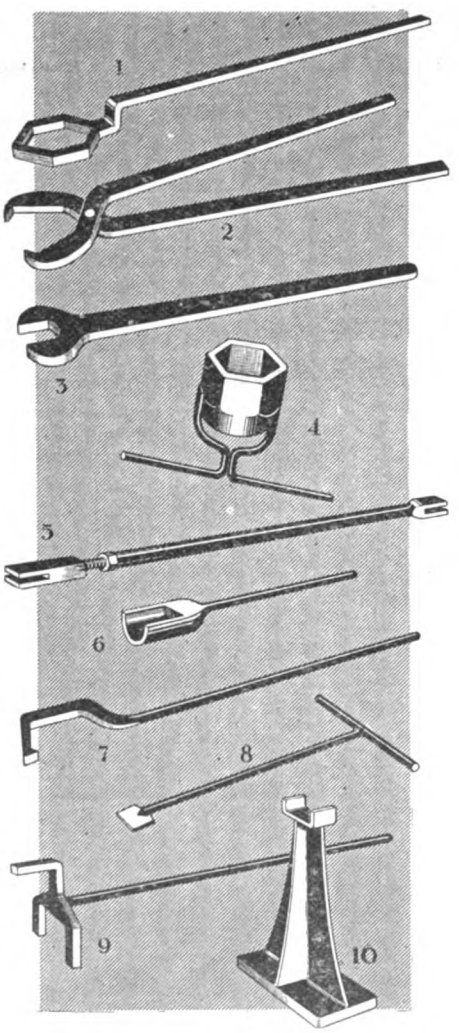


Fig. 12—Here are 10 tools, specially designed for speeding up Federal work—and suitable for work on almost any truck. No. 1 is a rear axle nut wrench; No. 2, tongs for replacing spring U-bolts; No. 3, a long handled wrench for tightening spring clips; No. 4, an improved hub nut wrench; No. 5, a frame spreader; No. 6, a wrench for replacing and tightening grease cups; No. 7, a spanner for worm and differential adjustment; No. 8, a powerful screw driver for reach rod work; No. 9, a lever for compressing a Borg & Beck clutch, on assembly, and No. 10, a durable auxiliary jack.

"Night Riders" Terrorize Negroes

SAVANNAH, Nov. 1—"Night Riders" in Houston and Crawford counties are conducting a campaign of terror against negroes in those counties who are buying automobiles with the proceeds of their cotton crops, and the situation has become so serious that Judge Mathews, of the Macon Circuit Court, has instructed the grand juries in those counties to make a thorough investigation. Law abiding negroes have appealed to Governor Dorsey for protection and Judge Mathews has endorsed the appeal.

The reign of terror began two weeks ago. A negro who had purchased a car was waited on by the night riders and severely whipped. The latest occurrences, and the one which resulted in the arrest of Jack Ong, an alleged member of the band, took place when Jack Thomas, who recently purchased a car, was called from his home at night. A sack was thrown over his head, but he gave the alarm, and the night riders fled. Later Ong was found lying in the grass nearby with a shotgun under his body.

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How to
Plan a New Building
7—Fundamentals of Garage Layout—(Continued)

The garage layout depends on the size and shape of plot and location of departments, elevators, ramps, entrances and the like. The position of an entrance or an elevator may be the deciding factor in determining a given layout

By Harold F. Blanchard

THIS instalment is a continuation of the one in the October 24 issue and should not be read until the latter has been studied. Briefly, No. 6 shows that there are three fundamental ways of arranging cars, as shown by the table below, and also by the drawings A, B and C, Fig. 1, at the bottom of this page. It should be remembered that 7 ft. is the usual width for a garage space and that the length varies according to the average size of cars stored and may run from 13 to 18 ft.

Segregate Cars by Size

An important principle is illustrated by these figures, and that is that where garage space is limited the cars should be segregated according to their size. In a type A layout, for example, cars over a given size would be put on one side of the aisle and those under on the other side.

IT IS ALWAYS DESIRABLE TO CLASSIFY THE CARS ACCORDING TO LENGTH, FOR THIS PRACTICE GIVES THE MAXIMUM AISLE WIDTH, and is an advantage whether the aisle is cramped or not.

The cars should be arranged according to their length, Fig. 2, with the shortest car opposite the longest one and the others tapering off as indicated.

These figures also show that a garage with Fords alone might be made slightly less than 40 ft. in width, and the same

GARAGE WIDTHS

Layout	Type of Garage	Width: Car length + Aisle + Car length	= Total
A	Ford or electric.	13 + 15 + 13	= 41
A	Country	13 + 15 + 15	= 43
A	Small-town	15 + 15 + 15	= 45
A	City	15 + 20 + 15	= 50
A	Big city.....	15 + 23 + 17	= 55
B	Small-town	15 + 15 + 15 + 15	= 60
B	City	15 + 15 + 20 + 15	= 65
B	Big city.....	14 + 15 + 23 + 18	= 70
C	Small-town	15 + 15 + 15 + 15 + 15	= 75
C	City	15 + 15 + 20 + 15 + 15	= 80
C	Big city.....	14 + 15 + 23 + 16 + 18	= 97

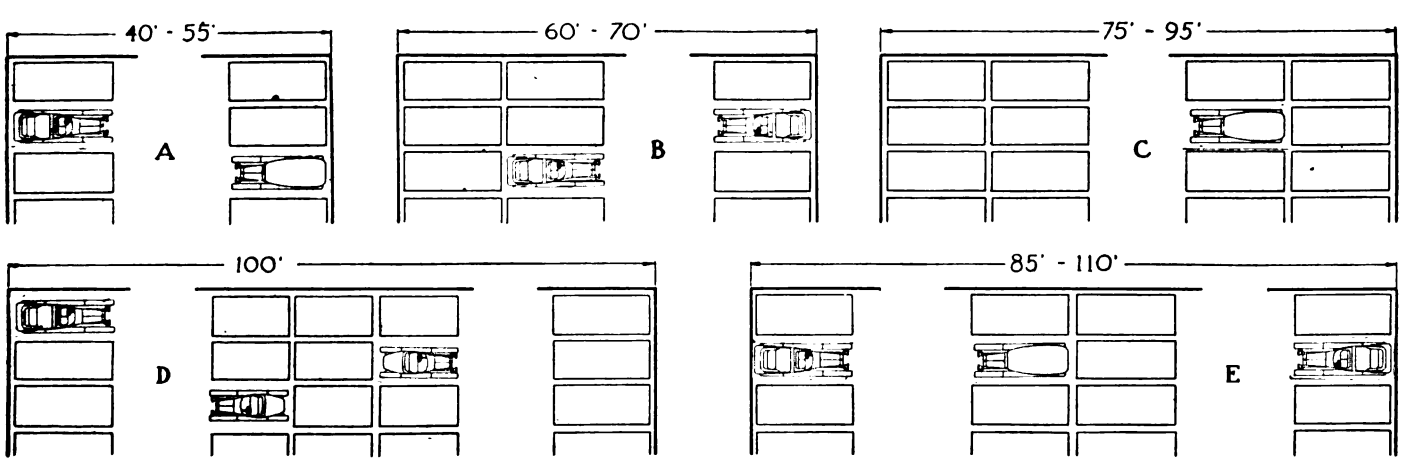


Fig. 1—A, B and C show the three fundamental layouts, and D and E are combinations of these. D is a combination of A and B, and E is simply A doubled

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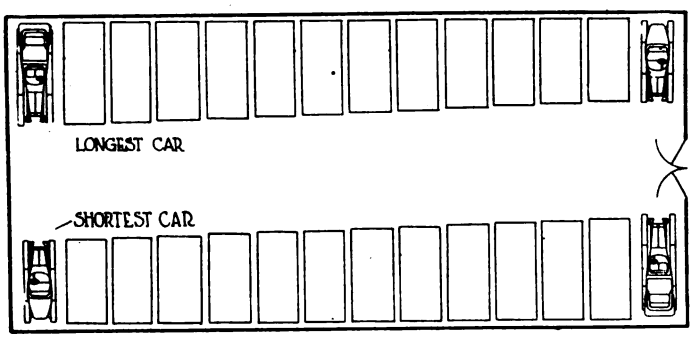


Fig. 2—In a narrow building maximum aisle width may be secured by arranging the cars in two reciprocal rows according to their length

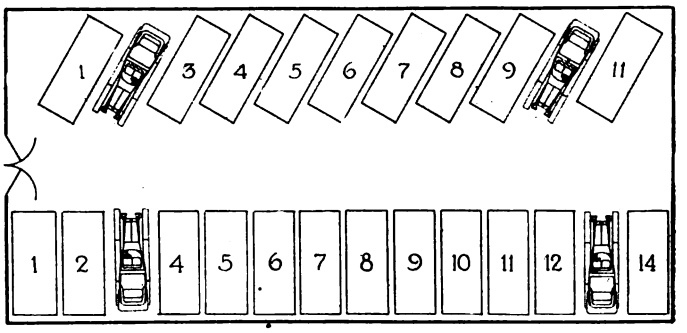


Fig. 3—Unless absolutely necessary because of the extreme narrowness of the building cars should not be placed at an angle

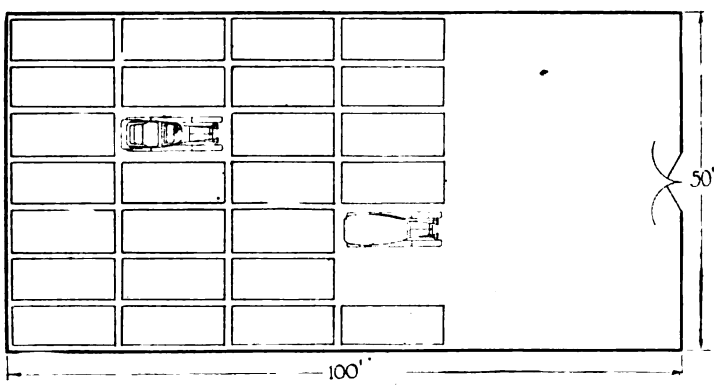


Fig. 4—Taxicabs take up less room because they may be packed in like lumps of sugar in a box since there is no choice as to cabs, one is as good as another

applies to garages exclusively for electrics.

Inside Lot Locations

The common layouts for inside lot locations are shown in Fig. 1. According to the figures given above, the width of A may vary from 40 to 55 ft., B from 60 to 70, and C from 75 to 95. D is a combination of A and B, and E is A doubled.

When a building is situated on a corner it is often desirable to use the whole of the frontage space for stores, and thus the garage entrance or entrances must be placed on the side, Fig. 5, but there is no difference in principle. The garage width is then measured along the length of the plot.

The length of the plot is now the important consideration, and in the case of A must be 40 to 55 ft. plus the depth of the store space; B must be 60 to 75, and C 75 to 95.

Cars At An Angle

The inadvisability of placing cars at an angle unless the aisle is so cramped as to make it absolutely necessary is demonstrated in Fig. 3. When the cars are at an angle, only eleven may be stored in a garage 100 ft. deep instead of fourteen.

The storage of taxicabs offers no problem, as shown by Fig. 4. Since the cars are all alike there is no reason why the first car in should not be the last one out, and as a rule there is no aisle space.

Position for Elevator

The position for the elevator or elevators should be selected with a view to convenience, but the most important consideration is conservation of space. The elevator should be directly on the aisle wherever possible, so that no area will be needlessly used in elevator passageways.

If the second floor is used only for dead storage or repair work and the traffic is very light, a slow-speed elevator, suspended from four cables and without guides, may be used. The advantage of this construction is that it does not take up any space, because the elevator is placed directly in the aisle, Fig. 9, and the elevator platform rests on the ground floor. When not in use the platform is brought to the level of the second floor.

Elevator in Passage

When the garage entrance is through

FOLLOWING articles will continue the question of scientific layout, after that plans for standard plots will be considered, and then finishing, decoration and equipping of the interior will be described.

We shall be glad to draw a plan for you or give you any other aid in your building, free of charge. But be sure to send full details, including a sketch of the plot, showing position of streets.

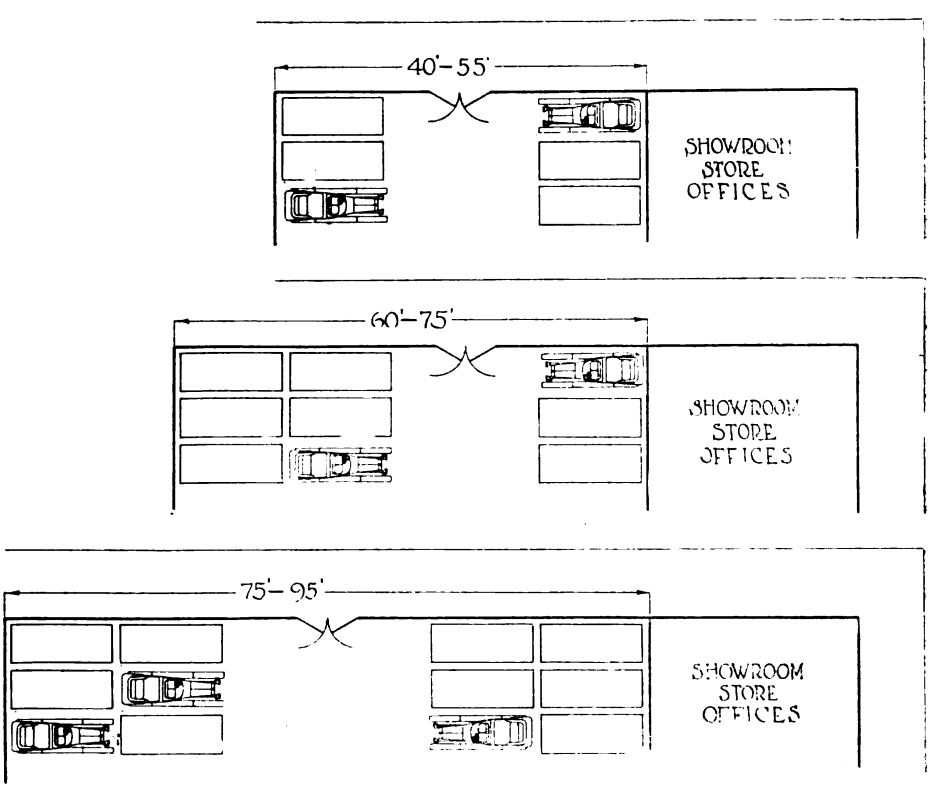
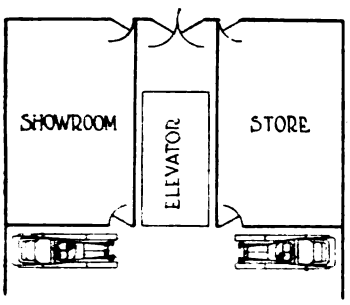
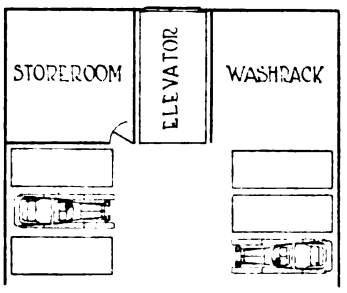


Fig. 5—A, B and C arrangements as applied to corner locations where the entrance is on the side and the front is taken up by showroom or store

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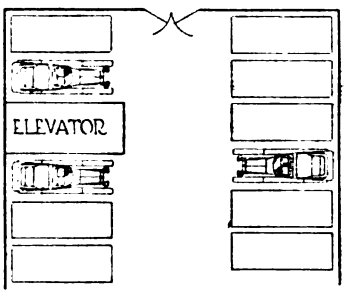
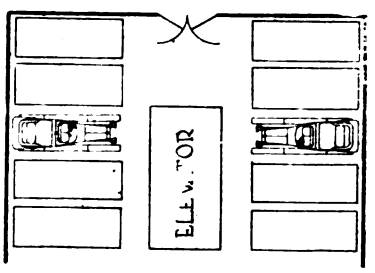


Fig. 6—Left—No space is wasted on the first floor if the elevator is placed right in the garage entrance and there is little objection to so doing. Fig. 7—Center—There is no better place for the elevator than the rear of the garage in the center, provided some efficient use can be made of the space each side. Fig. 8—Right—Provided the aisle is not too narrow the elevator may be ranged in a row of cars. This location eliminates waste of space in approaches

a narrow passage it may be found advisable to place the elevator in it, Fig. 6, as this arrangement also requires no extra space, since the same area that is used for the passageway also forms the elevator platform. The objections are that cars cannot move in and out when the elevator is in service, and considerable space may be wasted on the upper floors although this depends on the layout.

Placing the shaft at the end of the aisle, Fig. 7, is good practice only provided that the space at each side can be used for something besides car storage, because it is impossible to place cars in these areas without disturbing adjacent cars.

Usually the best position is that shown in Fig. 8; the shaft is placed in a row of cars, and while it occupies space that would hold two cars it will usually be found more convenient than the locations shown in Figs. 6 and 7, and it will be more economical than the plan in Fig. 7 unless the space at each side of the shaft can be utilized, as already stated.



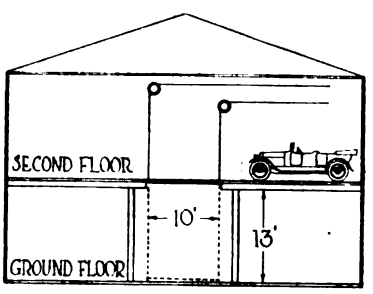


Fig. 9—Elevator which leaves the ground floor unencumbered and when drawn up forms part of the second floor. It can only be used when there is very little traffic to the second story

Where There Are Many Cars

In a garage where there is more than one aisle care must be taken in placing the elevator so that no space will be wasted in approaches, Fig. 10.

The importance of deciding how the cars are to be arranged before selecting the position for the elevator is clearly shown in Fig. 11. With one layout twenty-eight cars are provided for, but with the other, only twenty-six are accommodated, and the position of the elevator determines which may be used.

The cars should be placed on the different floors, so that elevator mileage is kept at a minimum. The cars that are used the most should be on the ground floor, those that are called for least on the top floor, and the others ranged in between, if there are more than two floors.

Look on Page 5

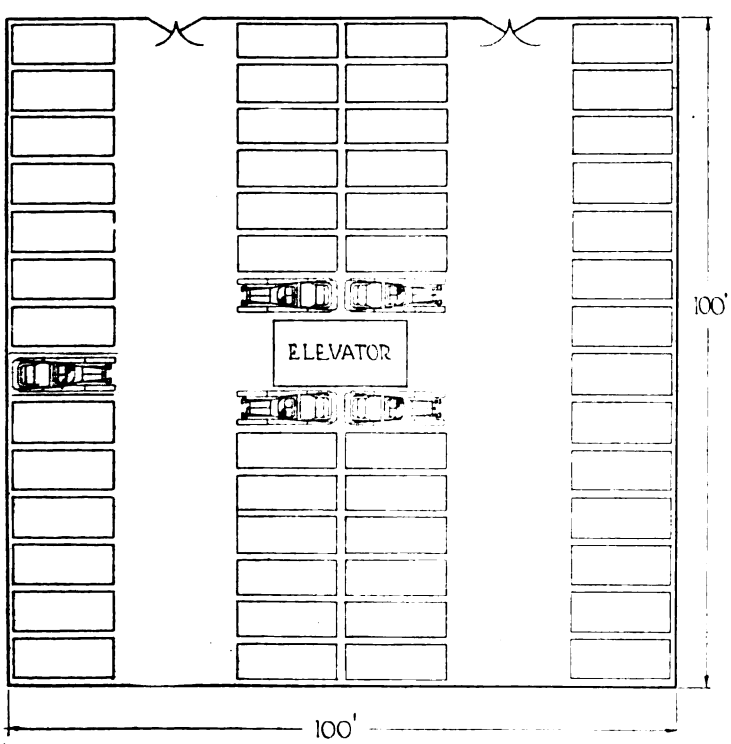


Fig. 10—This illustration shows how well the location of the elevator fits the layout. Almost any other position for it would interfere with the efficient use of the space

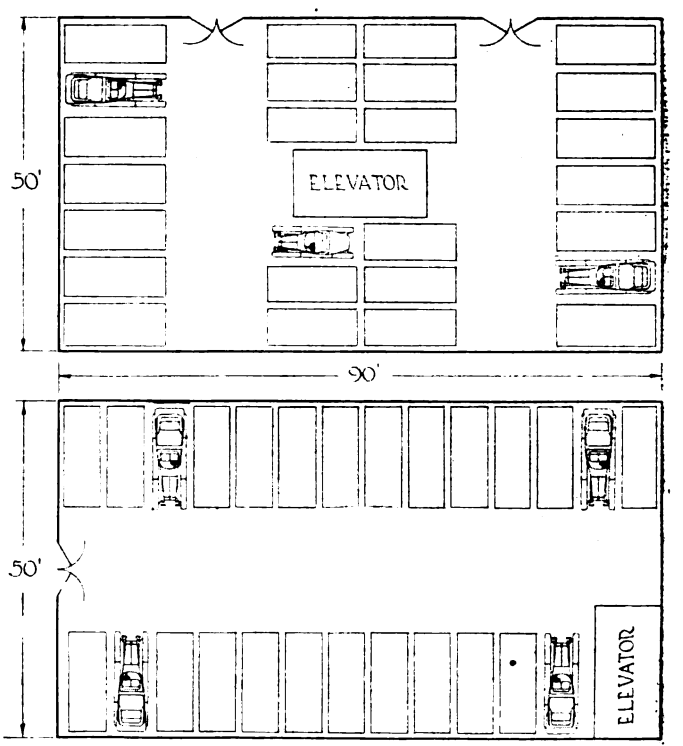


Fig. 11—Two elevator locations for small buildings. Which is preferable depends on many things, including the layout of the the upper stories

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Editorial Observation

Convince Washington or Be a Non-Essential

WASHINGTON says the passenger car is a luxury and a non-essential. Washington classed the car with cosmetics and musical instruments when our lawmakers placed a 3 per cent manufacturers' tax on it.

Washington again classed the passenger car as a non-essential and a luxury last week when it was ruled that open-top freight cars should not carry motor cars, furniture, pianos and materials for moving picture theaters.

Washington is still classing the passenger car as a luxury when last week another ruling stated that shipments of alloy steel to passenger car makers should stop and that the production of passenger cars would have to be restricted as necessary and the slack taken up with munition manufacture.

What Will Washington Do Next?

We do not know what official Washington will do next. We know that if there were the barest suggestion of a shortage of gasoline, this non-essential and this luxury, the passenger car, would soon be legislated to the garage. If there were any indication of a shortage of rubber it would soon be shown in prohibition of pneumatic tires.

What the motor car industry needs to do today is to show that it is **an essential and that the luxury and non-essential part of the business will automatically drop off without any restraining orders being necessary,** that adjustment of luxuries and non-essentials has already taken place in our city sales.

But the industry is not all luxury and it is far from all being non-essential, and the essential must remain and the utilitarian must remain. In short, the industry must remain as a robust one. Washington scarcely sees this. Washington sees the luxury only—the non-essential only.

Do They Consider Cars a Luxury?

Do those large industrial corporations with hundreds of salesmen who cover five towns per day in a motor car—where they could only cover three per day with the best railroad schedule—look upon the passenger car as a luxury, as a non-essential?

Do those large merchandising houses with thousands of city salesmen throughout the country who are selling only in cities consider the motor car a luxury or a non-essential **when the capacity of the man is doubled with the passenger car as compared with the best use he can make with the trolley lines, the elevated systems and the subways?**

Do our doctors who have extended their practices with the car consider it a luxury or non-essential in these days when we are faced with a shortage of doctors?

Do our great meat packing houses which send their salesmen up and down throughout the country in motor cars purchasing all kinds of live stock consider the runabout a luxury or a non-essential in their business?

Do our large grain buying houses with buyers

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constantly traveling all through the country look upon the car as a luxury?

Do the thousands of implement dealers selling farm machinery to the farmer and multiplying their salesmen's ability with the car look upon it as a non-essential in their business?

Do our millions of farmers now using the motor car to make a hurried trip to town when a part of the self-binder breaks in harvest time, when the eggs and butter of the farm must be gotten to market without the loss of an entire day from the hay field or the harvest field, look upon the car as a luxury?

How Cars Increase Efficiency

Do the leading merchants of our cities, whose only opportunity of getting some fresh air is during their trip to the store in the morning or at night, look upon the car as a luxury, or do they consider it a good method of avoiding doctor bills and a good method of increasing their efficiency while in the office?

Do our financiers, who ride to the office and back in the car or who make a long week-end trip in it, consider it a luxury when the good ozone they get into their lungs prevents them from making business mistakes that would cost them thousands of dollars?

Do the millions of our citizens, who get into God's fresh air every Saturday afternoon or Sunday, or every evening after a hard day's work, consider the car a non-essential when it gives them enough stimulation, enough renewed energy, enough renewed brain activity to make them more valuable during the entire week?

Is the passenger car, which has made it possible to bring the cool hillside 15 or 25 miles distant from the city close to the office, a non-essential in these days when we are short of brain power and are getting still shorter of man power?

Has it been a national luxury or a national necessity to get the hard working city man away from the city and into the country or to the seaside where with the aid of the car it is now possible for him to live?

Has it been a national luxury or a national necessity to bring the farmer closer to the town and the city, and to increase his thought of efficiency and to develop the spirit of co-operation in these days when more intensive agriculture is needed?

The farmer has been made more responsive to national demands because of the motor car. He is more liquid, in the language of the banker. That is, he is more easily brought up to the efficiency required to meet national needs because of the car.

To-day It Is War Efficiency

Analyze the motor car ownership in your locality and see what percentage of it is an essential ownership and what percentage can be classed in these days of higher efficiency as luxury and non-essential.

You owe it to yourself and the nation to-day to do this. You cannot get right with yourself or the country in this exigency unless you do this.

Contemplate those who have no cars but who in these strenuous war days can add to their efficiency by having them.

These are days when we must work harder than was necessary in peace times.

To-day it is war efficiency and not peace efficiency.

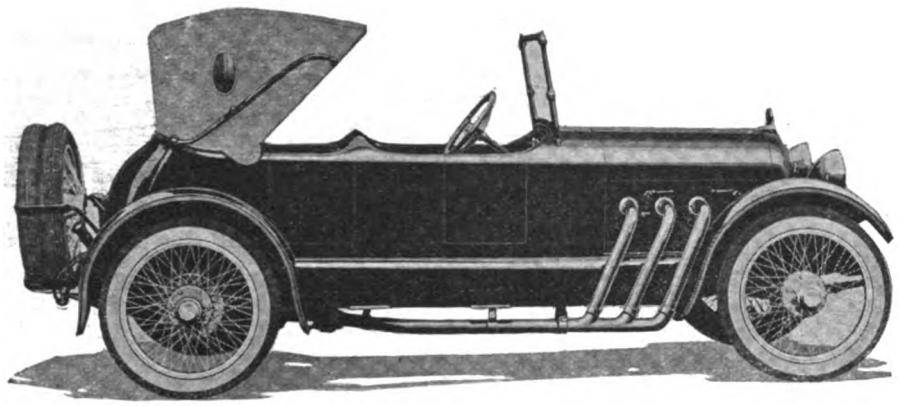
Luxury—

A free or extravagant indulgence in the pleasures that gratify the senses.

—New Standard Dictionary

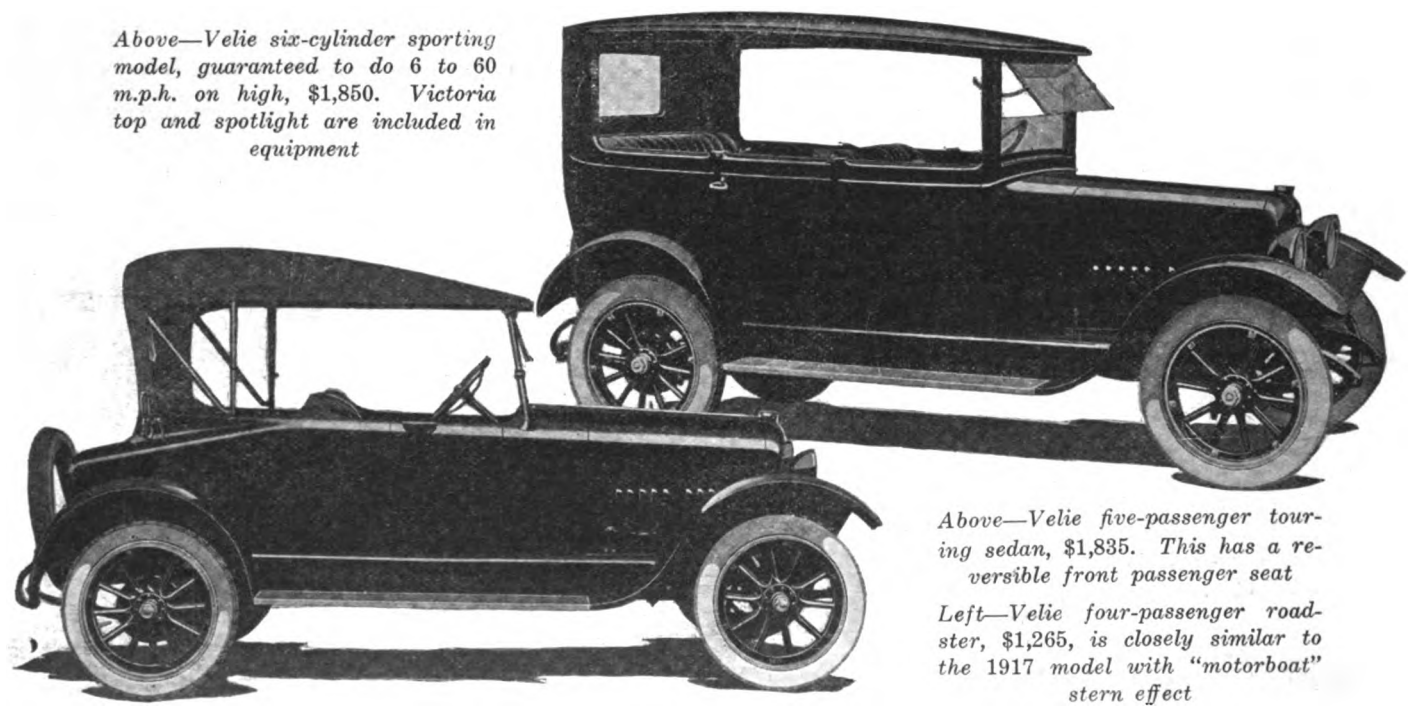
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1918 Velie Sixes Larger



New Line, with Nine Different Bodies, Has Many Refinements—Sport Model Added

Above—Velie six-cylinder sporting model, guaranteed to do 6 to 60 m.p.h. on high, $1,850. Victoria top and spotlight are included in equipment



Above—Velie five-passenger touring sedan, $1,835. This has a reversible front passenger seat

Left—Velie four-passenger roadster, $1,265, is closely similar to the 1917 model with "motorboat" stern effect

VELIE BILTWEL sixes for 1918 are larger than their predecessors. There are nine body styles for 1918. There are two chassis the same as previously, but the smaller this year is larger than last year's. A special sport model is among the additions. Not only are the new models larger but in addition to the bringing together of well-recognized component parts there have been refinements not looked for generally in cars of this price class. Moreover, the new Velies have a more graceful curve of body lines, a higher grade of upholstery and finish and many refinements of detail that were not found in their predecessors.

This year the smaller of the two chassis is designated as the 38. It is fitted with a six-cylinder Continental engine 3¼ x 4½, this being ¼ in. longer stroke than the smaller engine last year. This engine develops in excess of 40 hp. and has a wide range of speed and flexibility. Remy starting, lighting and ignition is a part of the engine assembly. A completely inclosed disk clutch and three-speed gearset are in a unit with the engine, all hung at three points with the engine.

Hotchkiss drive, which has been a feature of Velies for a number of years, is retained, as is also the Timken axle, which is spiral-bevel gear driven. The front axle also is a Timken, fitted with bearings of the same name. Refinements in mechanical design are evident. For example, all electric wiring is inclosed in metal conduit with protecting fuses on each service. The radiator is larger and deeper; headlights are rigidly mounted on tubular standards.

In body design, however, the new Model 38 is strikingly different. The higher radiator produces a hood line almost horizontal back to the sloping windshield, while the roll of the body sides continues unbroken from the nose of the radiator to the rise of the rear seat. Both front and rear seat backs are higher and more deeply cushioned over springs of more than usual resiliency. The seats tilt back comfortably and are upholstered in plaited French leather.

All instruments are neatly arranged on the cowl board. Control is center and pedals are adjustable to fit the driver. The top is of weather-proof Drednaut material and is provided with winter curtains that open with the doors. In the equipment is Stewart vacuum feed, Rayfield carbureter and 60-mile speedometer. The 38 chassis is fitted with 32 x 4 tires and the wheelbase is 115 in.

Six other body styles are available on the 38 chassis, all of which are new. The four-passenger roadster has a double cowl body with greatly increased room; the two-passenger roadster has new lines; the coupe has seating room for four; the cabriolet with large side windows has seats for three. A five-passenger touring sedan with staggered

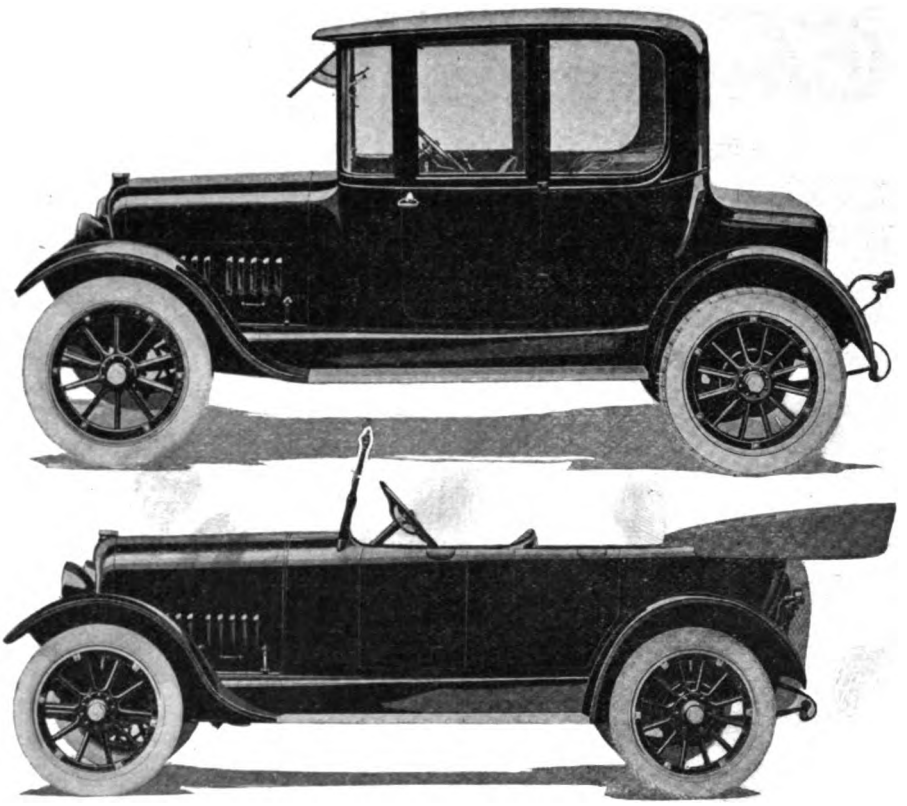
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doors and a reversible front seat and a brougham or town car complete the styles on this chassis. All closed models carry a Perfection exhaust heater.

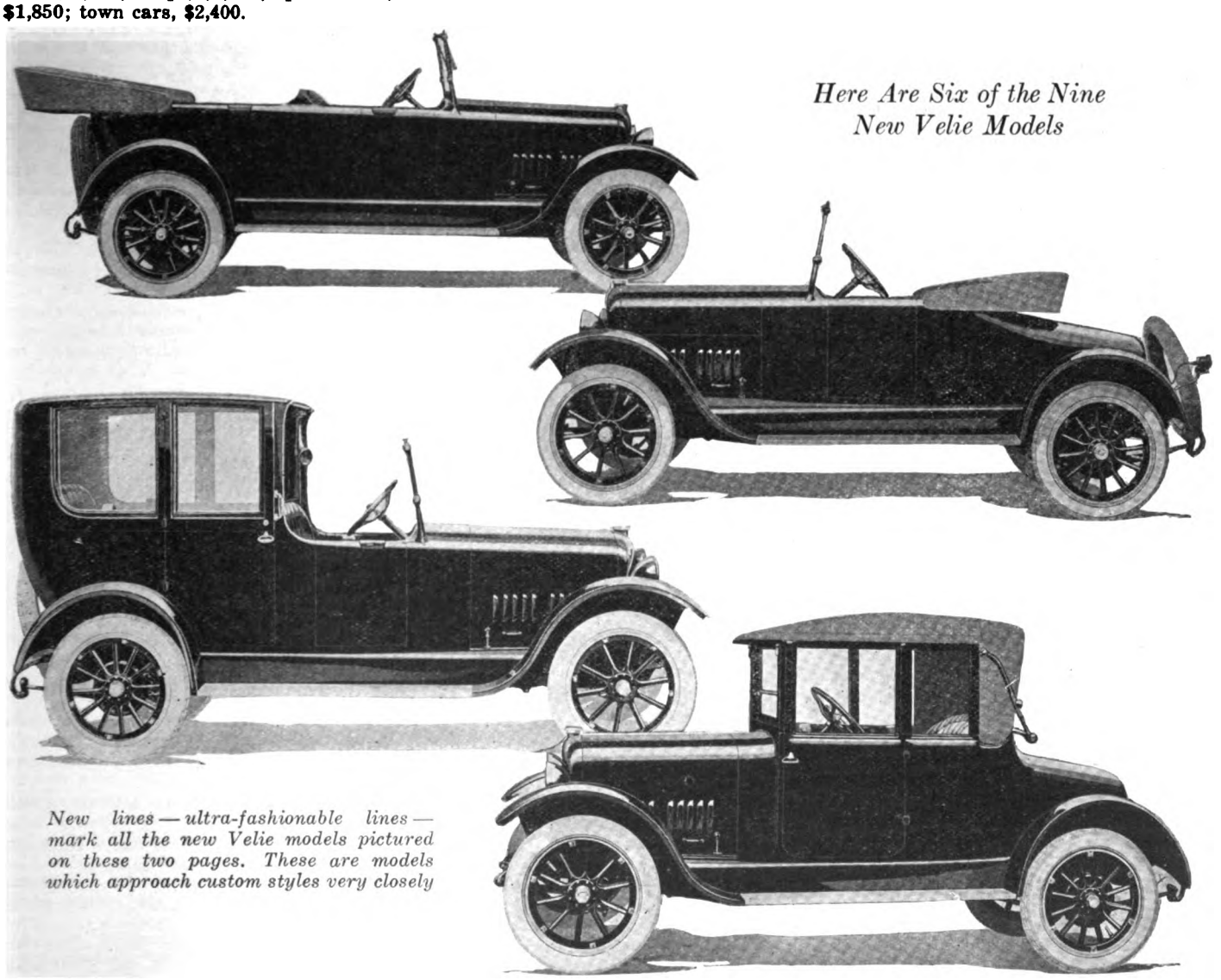
The larger chassis, known as the 39, has a wheelbase of 124 in. It uses a Continental engine, 3½ x 5¼. Mechanically this chassis is the same as the 38, except of heavier proportions. Two body styles are fitted—a seven-passenger which is large and roomy with straight lines and a double cowl, and a strictly original sport model. The extra seats in the seven-passenger fold into the backs of the front seats without the use of covers. Natural wood panels in front and rear compartments give a touch of distinction. Tires are 33 x 4½ in.

The sport model is a four-passenger, low hung with deep seats. Individual steps replace the customary running-boards. The exhaust manifold extends through the engine hood and to the rear in a long graceful sweep. A two-way valve permits of silencing the muffler or giving it free vent. In the equipment of the sport model are spotlight, Moto-Meter, power tire pump and Victoria top.

Prices of the Velie line are: Five-passenger touring, four-passenger and two-passenger roadster, $1,265; seven-passenger touring, $1,595; cabriolet, $1,750; sedan, 1,835; coupe, $1,850; sport model, $1,850; town cars, $2,400.



Here Are Six of the Nine New Velie Models



New lines — ultra-fashionable lines — mark all the new Velie models pictured on these two pages. These are models which approach custom styles very closely

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The RETAIL NEWS

MIDDLE WEST

St. Clair Bros., Leslie, Mich., have purchased the brick building next to the post-office and will move their garage on the first floor.

Ford Sales Co., Flint, Mich., one of the largest Ford service stations in the country, has opened at 2510-2518 North Saginaw Street.

W. D. Vandecar, Grand Rapids, Mich., western Michigan Reo dealer, will remodel and build an addition to his building, including the addition of a second floor at the front and the broadening of the salesrooms.

Joseph Sebota and George Martin, Grand Rapids, Mich., have purchased the Joseph Rempes Garage and have taken over the property. They will at first devote their time exclusively to the garage business, but eventually will branch out into the sales end of the industry and take on the agency for one or two popular priced cars.

H. C. Nelson, Montague, Mich., has opened his new brick garage and salesroom. The basement will be used as a garage and the ground floor as a showroom.

Seven-Seven Co., Spokane, Wash., Dodge distributer, has opened a used car department and has leased the salesrooms at West 1305 First Avenue, with Arthur Tyler in charge. Only Dodge and Ford cars will be sold.

The Auto Sales Co., Dodge dealer, Owosso, Mich., has remodeled its display room.

Ford Garage, Ortonville, Mich., now belongs to Carl Tode, his brother Otto Tode having sold out.

Tekonsha Garage, Albion, Mich., has been purchased by Harry Brooks and S. Walker of Jackson, Mich.

Northern Auto Co., Ford distributor, Albion, Mich., has established a chain of garages at Charlevoix and other points in Charlevoix and Emmet counties.

Queen City Auto Livery, Marquette, Mich., has moved its garage from 323 West Washington Street to 315 West Washington Street, and taken on a line of accessories.

Modern Garage, Chevrolet dealer, Pontiac, Mich., has opened for business. H. P. Hill will have charge.

C. L. Sturtevant Motor Sales Co., Toledo, Ohio, will handle Marmon cars at its new location, 1214-1216 Jefferson Avenue. C. L. Sturtevant has transferred the Paige agency to the Landman-Griffith Co.

Matlock Bros. & Fountain, Meridian, Idaho, have moved into their new garage.

Abbott Motor Car Sales, Detroit, has opened for business at 755 Cass Avenue.

Gould Jay Auto Co., Detroit, has gone into the second-hand business at 8 West Warren.

Swift Tire Repair Co., Detroit, has opened for business at 1296 Mack Avenue.

Marvel Carbureter Co., Flint, Mich., is erecting a one-story warehouse on Mill Street between Avon and East Streets to cost $1,000.

International Motor Co., 650 Woodward Avenue, Detroit, has opened for business.

Philip B. Friday, Niles, Mich., has moved into his new garage building.

Stuart & Chapman, South Wayne, Wis., Ford dealers, have purchased the Bert Chapman Garage at Darlington, Wis., and after remodeling and enlarging the building will use it as headquarters. The firm has contracted for 650 Fords for the new season.

American Auto Co., Tacoma, Wash., has opened its new showrooms at St. Helens Avenue and Second Avenue South. Herbert E. Stimpson is president of the company. The company has the agencies for Franklin, Stearns-Knight, Reo and Dort passenger cars and Mack and Reo trucks.

Toledo - Standard Motor Co., Standard Eight dealer, Toledo, Ohio, has opened at Madison Avenue and Tenth Street.

F. F. Wood, Grand Rapids, Mich., has opened a Ford sales and service station at 236-238 Ottawa Avenue, N. W.

Michigan Tire Co., Grand Rapids, Mich., is erecting a new building of brick, five stories high, over the east side canal.

Robb Motor Co., 215 East Twenty-ninth Street, Chicago, will erect a service station to cost $75,000.

John Mark and Claude Gildersleeve, Jackson, Mich., who recently entered the garage business as the Liberty Garage, on Pearl Street, will have the agency for the new Wolverine Flyer, manufactured by the Wolverine Motor Car Co.

Electric Storage Battery Co. of Philadelphia has opened an Exide service station at 1158 Cass Avenue, Detroit.

G. T. Wofford Oil Co., Atlanta, Ga., has opened a filling station at 296 Peachtree Street, Detroit.

Clarence D'Vincent, Ford dealer, Rogers City, Mich., has moved into his new garage.

Benzie Auto. Co., Ford dealer, Frankford, Mich., has opened for business and will handle accessories. A new garage will soon be built.

Fremont Auto Co., Fremont, Mich., has dissolved. The company was a partnership formed by Miller and Southard. Mr. Southard will continue in the business.

Harry Stenson of the Ford Garage at Oak Harbor, Ohio, has sold out to Martin Konneman of Rockyridge, Ohio, agent for the Dodge, who will continue the garage and repair department. The Ford agency has been transferred to F. C. Mitchel & Son.

New Garages

Galesburg Machine Works (115 x 132), Galesburg, Ill.
James Riley.....Wood River, Ill.
Lamberson & Hunt (75 x 150)..Streator, Ill.
C. B. De Long (50 x 100).....Homer, Ill.
Habecker & Zuercher.....Eureka, Ill.
White Cloud Garage (addition 16 x 16), White Cloud, Mich.
Harold Alwood.....Burlington, Mich.
Canton Grant Auto Co. (80 x 120), Canton, Ohio
Citizens' Motor Car Co. ($75,000)....Dayton
Schlear Motor Car Co.....Cincinnati
Steffens' Garage.....Fraser, Mich.
Edward A. Corpron.....Kinde, Mich.
Goodspeed Realty Co. ($19,000).Grand Rapids
Earl B. Thurston (68 x 126, $5,000), Cedar Springs, Mich.
Green & Judson (addition)....Fenton, Mich.
York Motor Sales Co.....Youngstown, Ohio
Star Auto Repair Co.....Cleveland, Ohio
H. J. Rotier (architect, 62 x 149)..Milwaukee
George Klenzendorf (architect, 70 x 170), Milwaukee
American Automobile Co. (75 x 120), Milwaukee
Charles Aronson (65 x 77).....Merrill, Wis.
F. C. Michel & Son (60 x 110), Oak Harbor, Ohio
Hobart, Bowlus, Brinker & Co. (50 x 146), Gilsonburg, Ohio
M. B. Rudes (50 x 150).....Genoa, Ohio
Woodward & Goodell (42 x 140)..Toledo, Ohio

SOUTHWEST

Standard Tire & Rubber Co., Inc., Kansas City, Mo., has opened for business at the old location of the Gustin-Bacon Mfg. Co., 1604 Grand Avenue, where it will carry the largest stock of automobile tires and tubes in the Southwest. The company is under the management of Arthur Rosenberg and Joseph Rosenberg, formerly of New York and Detroit.

A. B. Johnson, St. James, Mo., has purchased the C. L. Peters Garage.

J. A. Barham, Bloomfield, Mo., has moved his repair shop and garage to the Tucker Building. He will handle the Maxwell car.

Hugh Arnhold, Jefferson City, Mo., has sold his automobile business on Monroe Street He has sold his garage to Earl Grant.

Frank Maudlin, Allendale, Mo., has bought the Allendale Garage.

Herman Renken, Sweet Springs, Mo., has bought J. Echkoff's garage.

Pemiscot Motor Car Co., Caruthersville, Mo., recently took over the business of the J. L. Daniel Auto Sales Co. and in future will act as agent for the Weber Implement Co. in the sale of Hupmobile and Maxwell cars.

S. D. Vincent, Lawrence, Kan., agent for the Briscoe automobile, has opened a salesroom.

Hardtner Garage, Hardtner, Kan., has been sold by Jay Lewis and Node Myers to D. G. Thompson of the Ford Garage at Kiowa.

Charles T. Wilson, proprietor of the Manhattan Auto Tire & Vulcanizing Works, has changed the firm name to C. T. Wilson Tire Co. The business has been moved to a new building with twice the floor space of the old.

Nagelvoort-Stearns Cadillac Co., is establishing a branch in Hutchinson, Kan.

A. A. Pilkington, Burrton, Kan., has rented the repair floor of his garage to Ralph Cooke. Mr. Pilkington will continue to sell tires, gasoline and accessories.

George S. Dillon, Elgin, Kan., has leased the local garage.

John Knapp, Luray, Kan., is building an addition to his blacksmith shop, which will be used for an automobile repairshop.

R. E. Campbell, Clearwater, Kan., has leased the garage of Smith & Geisendorf, formerly conducted by C. Baker.

D. G. Thompson, Hardtner, Kan., has bought the Lewis & Meyers Garage.

Fred Cross, Ellis, Kan., Overland dealer, recently lost his garage by fire.

Kimzey & Barber, Hovard, Kan., has succeeded Edwin Barber in his garage.

Hoer-Woodbridge Auto Co., Mexico, Mo., is the successor to Franklin & Gamble.

Robert MacRaynolds, Knox City, Mo., has bought the Leon Ladd Garage.

Hugo Arnhold, California, Mo., has sold his garage to Earl Grant.

R. L. Raymond, Liberty, Mo., is remodeling his garage.

Woodrell & Proffitt Auto Co., West Plains, Mo., has bought the local garage.

Nulton Motor Co., Mexico, Mo., is the successor to Nulton & Sands in the garage business.

Homer Humphrey, Springfield, Mo., who has a garage, will take the Maxwell agency.

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A. B. Johnson, St. James, Mo., has succeeded to the ownership of C. L. Peters' Garage.

Malugen, Carter & Malugen, Poplar Bluff, Mo., have succeeded Modern Motor Car Co.

New Garages

Dorsey & Calladam.....Broken Bow, Okla.
E. P. Munch & Son.....Hennessey, Okla.
J. H. Fry.....Thomas, Okla.
C. M. Gibson.....Miami, Okla.
McDowell Bros. .....Higginsville, Mo.
Zahringer Bros. .....Blackwater, Mo.
H. L. Silvers.....Excelsior Springs, Mo.
O. Hardman.....Canker City, Kan.
Barnett & Parrick.....Coffeyville, Kan.
W. L. Jackson.....Hill City, Kan.
Ross Motor Co.....Stafford, Kan.
Fred Howard .....Atwood, Kan.
Packard Motor Co.....Topeka, Kan.
E. G. Newman.....Arkansas City, Kan.
J. G. Shanlep.....Washington, Kan.
Payne & Grening.....Wabetha, Kan.
Andre Auto Supply Co.....Arkansas, Kan.
A. C. King.....Hutchinson, Kan.
Marr .....Iola, Kan.
Sam Allen .....Valley Falls, Kan.
W. B. Heywood.....Topeka, Kan.
Atwood Mercantile Co.....Herndon, Kan.
Gardner & Duff.....Corcordia, Kan.
Ralph E. Dickson.....Beloit, Kan.
Security Motor Co. ($50,000).Kansas City, Mo.
R. C. Shipler.....Alden, Kan.

NORTHWEST

Diamond Auto & Supply Co., Des Moines, has opened a second service station at 616 East Grand Avenue.

Spry & Diller Co., Des Moines, has been reorganized and will now be known as the Spry & McArthur Co.

Harry Widlund, Manson, Iowa, has sold his vulcanizing business to Roy Marple of Humbolt, Iowa.

Frank Robertson, Ida Grove, Iowa, has bought the Exide battery service station from J. M. Rees.

Walker Motor Co., now operating at Spirit Lake and Esterville, Iowa, will build a garage at Sibley, Iowa.

Harm Harberts, Sibley, Iowa, has sold his garage to J. W. Kennedy of Sheldon.

W. F. Yeoman, Hardy, Iowa, has sold his garage to William Jones of Sheffield, Iowa.

Lee Wilson, Southerland, Iowa, has sold his garage to Max Dreike and will open a garage at Brookings, S. D.

A. H. Hartman of Manchester, Iowa, has bought T. F. Donnelley's garage at Coggon, Iowa.

Parkhurst & Lavender, Webster City, Iowa, have dissolved and the business will be continued as the Parkhurst Auto Co.

F. D. Adix, Boone, Iowa, has bought the Erickson Auto Supply Co. from John Erickson.

Kahr Bros., Exeter, Neb., have bought the repairshop of E. E. Christensen.

Lee Brenner and Fritz Nelson, Randolph, Neb., have bought the Palace Garage of Pruden & Sellon.

A. L. Woods & Co., Union, Iowa, have bought the Harrison Motor Co. Garage at Hampton, Iowa.

G. A. Johnson, Council Bluffs, Iowa, has bought the Red Oak Garage at Red Oak, Iowa.

Roy Langdon, Gretna, Neb., has bought the garage of William Rightmeyer.

L. W. and A. J. Jackson, Des Moines, Iowa, have bought the Cooper Garage.

George Black & Son, Lenox, Iowa, have bought the garage of L. E. Neeley.

Frank Bissell, Stuart, Iowa, has bought the T. J. Smith Auto Co. Garage.

New Garages

Ruecker Brothers.....Centerville, Iowa
J. E. O'Dell.....Atlantic, Iowa
Everybody's Garage.....Walnut, Iowa
Lingo Brothers.....Norwich, Iowa
Longacker & Nean Motor Co.Knoxville, Iowa
Martin L. Thompson.....Ellsworth, Iowa
J. F. Boudler and E. D. Wadsworth, Greenfield, Iowa
Ostrander Brothers.....West Union, Iowa
McFaydon Motor Co....Council Bluffs, Iowa
Scase and McHenry.....Ottumwa, Iowa

PACIFIC COAST

Tri-State Tire Co., Portland, Ore., has opened offices at 72 Sixth Street, under the management of W. L. Bartlett. The company handles Perfection tires.

Tacoma Auto Exchange, Tacoma, Wash., has been purchased by C. E. Alden and F. W. White, who will carry accessories and operate a repair shop.

Buick Sales Co., Wenatchee, Wash., has been opened by F. M. Pentecost.

Koehring Machine Co., Spokane, Wash., has opened at 806-12 Third Avenue under the management of Frank A. Vogt.

Standard Motor Co., Spokane, distributor for Briscoe, Kissel Kar and Doble steam car, have taken over the salesroom recently vacated by the Harry L. Olive Co. The company will occupy the entire building.

Seven-Seven Co., Spokane, Dodge agent, has leased the garage at 1313 Sprague Avenue.

Electric Service Auto Co., 391 Oak Street, Portland, has been chosen as retail sales agents and official service station for the Rayfield carbureter.

W. H. Wallingford, Ford dealer, Portland, has recently moved to new quarters at Sixth and Madison streets, where he has fitted up salesroom, garage, storage, repair shop and service station.

Cottle & Young have opened a new repair shop at 1514 Broadway, Seattle.

Mitchell, Lewis & Staver, Portland, have taken quarters on Automobile Row. A. L. Smith is manager.

New Garages

Griffith Motor Car Co. (50 x 120, $30,000), Tacoma
Tacoma Auto Brokerage Co. ($20,000), Tacoma
Wood & Lane (100 x 120, $30,000), Walla Walla, Wn.
W. C. Parker ($5,000).....Baldwin, Ida.
C. L. Idleman ($12,500).....Caldwell, Ida.
I. M. Barnett (100 x 100).....Waco, Ore.

MOUNTAIN

A. H. A. Tire Exchange, Denver, is a new guarantee tire and repair concern at 19 East Thirteenth Avenue.

Austgen Rubber Co., Denver, has moved from 19 South Broadway to 1948 Broadway.

Colorado Motor Co., Denver, Reo distributor for Colorado and adjacent territory, has moved from 1535 Cleveland Place into a new $40,000 fireproof brick and steel building, 50 x 150, at 1115 Broadway.

All-Year Motor Co., Denver, Kissel and Mercer distributer for Colorado and adjacent territory, has moved from 1517 Cheyenne Place into larger and newer quarters at 35 East Colfax Avenue.

The O'Meara-Green Motor Co., Denver, local Ford agent, has moved from 1439 Cleveland Place into a new $75,000 fireproof brick and steel building at 4 to 14 West Fourteenth Avenue Park and Boulevard.

J. L. Armstrong, Denver, Winton distributer for Colorado and Wyoming and Baker and Rauch & Lang electric agent for the Denver territory, has moved from 1542 Broadway into larger quarters at 1346 Acoma.

C. C. Hovt, Denver, has opened a Hoosier sub-carbureter distributing agency for Colorado at 1508-1512 Cleveland Place.

Willys-Overland Denver Branch has moved its used car department from 801 Broadway to 1517 Cheyenne Place. The main salesroom is at 1509 Cheyenne Place.

W. W. Barnett, Denver, Oldsmobile, Federal and Stewart truck and Ohio Electric distributer for Colorado and adjacent territory, has opened a used car department at 801 Broadway. His main salesroom is at 1308-1310 Lincoln Street.

New Garages

Stockyards Garage Co. (89 x 106, $20,000), Denver
Rasmussen & Osborn (50 x 80 addition), Bayard, Neb.
Sedalia Garage.....Sedalia, Col.
E. W. Smith ($1,500, 50 x 50)..La Salle, Col.
Eighteenth Avenue Garage (100 x 105), Denver, Col.

SOUTH

Louis E. Wisdom has begun the erection of a two-story garage in Gainesville, Ga. It will be brick, with iron and plate glass front, and will have every convenience and comfort that can be provided, including rest rooms, etc. The concern will handle Ford cars. Mr. Wisdom's investment will be approximately $15,000.

Crisp-Wilcox Co., Cordele, Ga., agent for the Chevrolet cars, is in its new home, where it has also installed an up-to-date service station.

Carter Vulcanizing Co., Columbus, Ga., is established in new quarters on Broad Street, where additional equipment has been installed. Some of the machinery is of the very latest improved models.

W. W. Walker and J. S. Yerby, Jr., owners of the Tuscaloosa Motor Co., Tuscaloosa, Ala., have purchased the Cooper-Foster Motor Co., the name of which will be changed accordingly.

G. Hines Ennis, Milledgeville, Ga., has purchased an automobile storage and repair plant from H. K. Brown.

Henry Lee Davis, Augusta, Ga., will establish and equip a garage and machine shop.

Imperial Garage, Clarksdale, Miss., has been incorporated by W. K. Herrin. The capital stock of the concern will be $10,000

CANADA

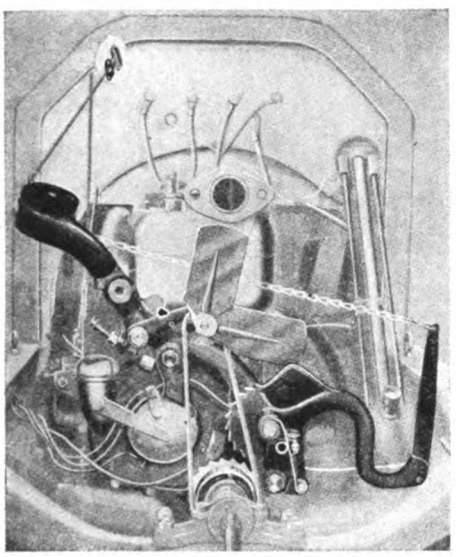
Sullivan-Taylor Motor Co., 25 Kingsway, Vancouver, B. C., distributer for Ford cars, has taken the agency for the Gray and Davis starting and lighting systems for Ford cars for British Columbia. Sub-dealers throughout the province will be established.

New Garages

Siegel Automobile Co.....Calgary, Alta.
Mark Drummond Auto Sales, Ltd., Calgary, Alta.

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Accessories

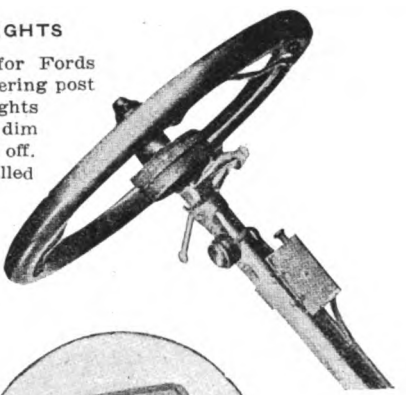


STARTER FOR FORDS

A hand-operated pull starter in which a ratchet segment engages the ratchet wheel on the crankshaft. It may be installed in 2 hours. It is designed to prevent back-kick and there is a primer to aid in starting. Price $10.—Simplex Mfg. Co., Anderson, Ind

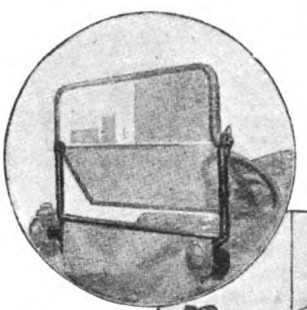
HAN-D-DIM LIGHTS

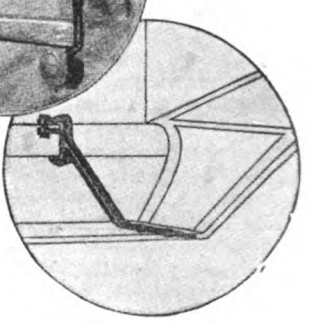
A light switch for Fords fastened on the steering post arranged so that lights will burn bright, dim or may be switched off. Price $2.50; installed in 5 min.—The Han-D-Dim Co., Chicago.



SHURNUFF WINDSHIELD VENTILATOR

The ventilator consists of two black-enameled uprights attached to the hinges of the Ford windshield so that both upper and lower sections may be swung. The sides are rain-proofed by a metal and rubber strip. A handle is furnished for pulling the lower section back. Price $7.50.—Shurnuff Mfg. Co., St. Louis.



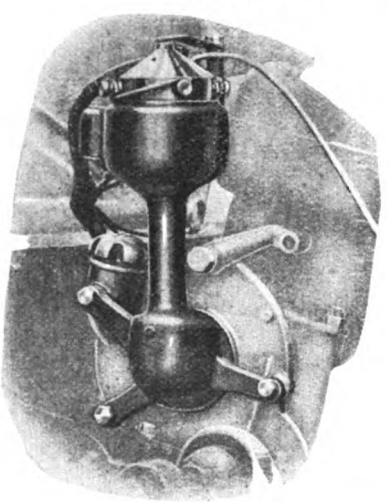


SHURNUFF RUNNINGBOARD BRACE

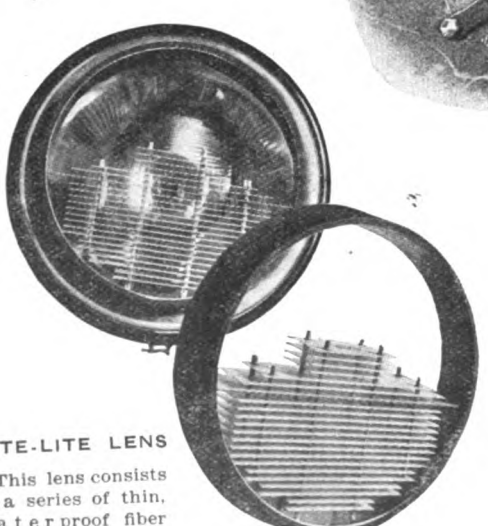
A bracket which supports fenders and runningboards on the Ford and is attached to the frame by tightening two bolts. No holes need be bored. Price $4.50 per pair.—Shurnuff Mfg. Co., St. Louis.

MATTHEWS RECTIFIER

To utilize the power from the Ford magneto this rectifier has been brought out to change the surplus alternating current to direct, or sufficient, it is said, to keep a 6-volt battery charged. The device is installed at the front in place of the usual timer, and a new timer is installed in the device. Better firing at low speeds and steady, bright lights are claimed. Rectifier, $17.50; with battery, $29.50. Complete outfit with spotlight, wires, etc., $33.—Consolidated Utilities Corp., Chicago.







RITE-LITE LENS

This lens consists of a series of thin, waterproof fiber planes mounted in the lower portion of a rust-proof metal casing attached to the front of the lamp. The planes prevent the passage of all light which would go above the horizontal, the rays being deflected to the under side of the plane and thrown to the ground. No light is wasted. With 18 c.p. bulbs good illumination has been secured 200 ft. ahead of the machine. The planes may be had in ivory finish, red, white and blue.—The Hale-Green Co., 182 Prospect Avenue, S.E., Cleveland.

KELSEY STREAMLINE BODY

A handsome body, 11½ in. longer than the standard Ford body, 5½ in. additional in the front seat and 6 in. in the rear. The upholstery is high grade artificial leather. The top is a one-man design complete with curtains and dust hood. The windshield is slanting, double ventilating and can be tilted to any angle. A tire carrier is supplied. The body may be attached in about 2 hours, it is said. Weight complete for shipment, 800 lb. Color choices include black, blue with black molding and royal blue with black molding. Price $195.—Kelsey Wheel Co., Inc., Detroit.

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Your Greatest Buyer

By Ray W. Sherman



"SAY, Mr. Reilly," exploded young Roberts, as he walked into the boss's office, "I don't seem to be able to sell sedans. I can sell touring cars, and I believe I could sell them even in the winter, but I don't seem to be able to get across with this sedan stuff."

"No?"

"No. I try to sell a man a sedan. I tell him he can drive in the summer as well as in the winter, and if he smiles at me and looks as though I were kidding him I lose my nerve. I fall down, back out and quit. What ails me anyway?"

"Oh, I don't know. You're all right, I guess. But why do you quit and give up when you meet opposition?"

Roberts hesitated. He scratched his head. "I don't know," he puzzled. "If I did maybe I could do better."

"Are you thoroughly sold on the idea of driving a sedan the year around?"

"Why—yes—I guess I am," faltered the young man.

"And I guess that's the cause of all your trouble," smiled Reilly. "You are trying to sell something on which you're not sold yourself. Don't you suppose that's your difficulty?"

Not Quite Sold

"Maybe it is," Roberts admitted.

"Maybe it's this way," suggested Reilly. "You believe the Sennett is a good car, the best thing in Callawassa. You believe a sedan is a mighty comfortable affair in winter when it's cold and snowy, but you don't quite believe it's just the thing for summer touring. Is that the idea.?"

"Yes, I guess you're about right," said the salesman.

"Wel: then, it seems to me the only thing for us to do is help you sell yourself on the idea of using a sedan the year around. We might talk about it all winter and it maybe wouldn't mean much to you so I guess we'll have to give you a demonstration. It's rather warm to-day and is a near approach to summer, so you and Tommy can go out and find how nice a sedan is even if it isn't bitter cold. There are as many summer sedan arguments as there are winter sedan sales points.

Not Hopeless

"I'm glad you asked me about this thing, Roberts, for if you hadn't your way might have been hard for you all winter. As it is I think we can straighten things out so you can make more sales and more money this winter.

"If more salesmen realized the same condition, Robby, there would be a lot more money made by salesmen. They go out and try to sell goods on which they are not sold themselves. The salesman may go out for a tire, and try to tell what a fine tire it is when he doesn't believe it is very good. Or he may go out to represent a jobbing house that talks of service, whereas he hasn't a very high opinion of the house's service.

"If the service of the house is right the salesman should be sold on it. If it isn't right the house is foolish to try to howl about it and the salesman would do a lot better if he hooked up with something he believed in.

Lack of Confidence

"A salesman or a dealer may be pushing a car in which he does not believe, and in every such case the man behind the goods is having hard sledding. He may not realize it—but he is. That's one of the great reasons so many salesmen who come in here with all kinds of accessories and office appliances go out without orders. They don't seem to have confidence in their own goods.

"They should go back where they started from and try to get sold on their own goods. If they can't sell themselves how can they expect to sell anyone else. They may get by with a few orders, but they can't cash in one hundred per cent unless they have absolute confidence in the work they are in.

"The same rule applies to every one of us every hour of the day, Robby. You can't sell goods in which you don't believe. Whenever you apply for a job you are trying to sell yourself to your prospective employer, and you can't make the best of the deal unless you believe in yourself. If you have absolute confidence that you can fill the bill you have a lot better chance of landing the job than if you are only suspicious as to your ability. To sell goods you must be confident, not merely suspicious, as to their value.

Your Greatest Buyer

"In all business, especially the selling of goods, Robby, you've got to sell yourself on every proposition before you can expect to sell anyone else. Otherwise you're in a moral class with the Wallingfords and Blackie Daws. Sell yourself first.

"You yourself are your own greatest buyer."

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Additional Tax Rulings Affecting Car Industry

Treasury Department, at Request of Manufacturers, Issues Preliminary Provisions

WASHINGTON, Nov. 5—The Internal Revenue Department of the Treasury Department, at the request of certain manufacturers and the National Automobile Chamber of Commerce, has made some additional preliminary (but not final) rulings relative to the War Revenue Act as it affects the automobile industry. Until official rulings are made the following may be taken as a guide:

1. CARS FOR THE UNITED STATES GOVERNMENT—The Treasury Department has decided that automobiles sold by manufacturers to the United States Government on contract at contract prices cannot have the tax added to the price. It was hoped that under Section 3464 of the Revised Statutes, such automobiles could be relieved from the tax through an application from the branch of the Government purchasing the article. The Treasury Department rules that this cannot apply on present contracts.

2. PROVISION FOR ADDING TAXES TO CONTRACT PRICE—If not already provided for in contracts, our counsel advises the addition of the following: All taxes, imposts or other charges whatsoever hereafter added or imposed by the Federal Government or any State government shall be added to the contract price.

3. FLOOR TAX—A late ruling of the Treasury Department provides that where separate books and a separate stock are kept of cars to be sold only at retail and distinct from a line of cars which are sold both wholesale and retail, the retail stock of cars is not taxable.

4. EXAMPLE—The Smith Automobile Co. handles Hudson cars as a distributer for New York, selling at both wholesale and retail. On all Hudson cars on hand Oct. 4 they must pay the floor tax. If the same company, however, has a separate contract with the Dodge Brothers for selling Dodge cars at retail only and there are separate contracts, separate accounts, and separate books of stock, then the Dodge cars under the retail contract are exempt from the tax. If both the Dodge and the Hudson cars are sold at wholesale as well as retail, then all the cars the wholesaler-retailer had on hand Oct. 4 are subject to the floor tax.

5. In like instance, the Brown Automobile Co., a separate corporation of the factory, but owned by the factory, does a wholesale and retail business in New York. It is taxed on all the cars it had in stock on Oct. 4. It does, however, have retail branches at Springfield, Bridgeport and Albany, which sell cars at retail only. If the cars of those branches are held separate and accounts held separate, the retail stocks are exempt from floor tax.

6. The Walton Automobile Co. of Cleveland has branches throughout the country that are not separate corporations, but do business as the Walton Automobile Co., a corporation of Ohio. Such branches, whether they do a wholesale or retail business, are selling the stock of the home manufacturer and are subject to a 3 per cent manufacturer's sales tax on the price at which sold.

7. Automobile manufacturers should notify their wholesalers of the above rulings. In case any excess payments have been made the Internal Revenue Department has a right to refund upon application.

8. USED CARS—It has been ruled definitely that used cars are not subject to tax. Demonstrators, that is, new cars taken for demonstration purposes, are subject to tax.

9. COMPLETING AUTOMOBILES BY PLACING A BODY ON CHASSIS—The Treasury Department is inclined to rule that a party that buys a chassis and then completes the automobile by the addition of a body is a "producer" within the meaning of the law, and subject to the 3 per cent tax on sale by such "producer" of the article so produced. This will apply to Form-A-Truck companies which produce an automobile from second-hand parts and certain attachments, also to a wholesaler who buys chassis and has bodies made for them and attached. Under this ruling a dealer who buys chassis and then buys bodies elsewhere for attachment is subject to a tax of 3 per cent when the articles are sold. There will be further consideration of this, because in most instances a tax will have been paid on the chassis when sold by the manufacturer; Treasury officials say that in such cases a refund will be made. The same situation applies to the addition of side-car attachments to motorcycles.

10. The pressure of applications for official rulings is so great that it will be some time before they can be secured from the Treasury Department, but the above is given to show the preliminary thought of the officials, which in most cases is expected to prevail.

Bronx First Show Coming Well

NEW YORK, Nov. 3—The newly formed Bronx Automobile Dealers' Association is coming well with its first show, to be held Feb. 9-16 in the Second Battery Armory at East 165th Street and Third Avenue. Nearly $5,000 of space has been sold already. Considerable cooperation is being secured from the distributers in Manhattan.

Among the dealers and cars thus far listed are: Ford, Bronx County Automobile Co. and White Bros.; Paige, Paige Co. of the Bronx; Chevrolet, Fordham Motor Sales Co.; Hupmobile, William Moller; Chalmers, R. V. B. Motor Sales Co.; Chandler, Concourse Motor Car Co.; Scripps-Booth, S. Daly; Lexington, Lexington Motors New York Corp.; Dodge, John B. Elsey, Inc.; Gramm-Bernstein truck, Homer Waltemyre

The show work is in charge of a committee headed by D. J. Barrett. The association is making its headquarters at 607 Bergen Avenue.

Chevrolet Sales Increase 87 Per Cent

NEW YORK, Nov. 3—In its statement to the stockholders, the Chevrolet Motor Co. reports an 87 per cent increase in its sales for the 9 months ending Sept. 30, 1917. During that period 95,084 cars valued at $46,178,325 were sold, as compared with 51,070 cars valued at $24,703,720 in the corresponding period of 1916.

Large Federal Orders Placed with Makers

Curtiss Gets Contract for 1500 Airplanes—Westinghouse Plans to Make 600 Motors a Month

DETROIT, Nov. 2—Manufactlurers in the automotive field have recently received many large Government contracts. The Curtiss Aeroplane & Motors Corp. has received orders for about 1500 training machines at $4,500 each. The business will be confined solely to training machines having the O. X. type engine of 90 h.p. and to the production of planes for fighting machines. It is stated that the Willys-Overland, Inc., is planning to manufacture the engines for the training machines in the plant at Toledo.

The Westinghouse Electric & Mfg. Co., of East Pittsburgh, Pa., is planning a new airplane engine plant at Swissdale, Pa., to produce 600 motors per month on a contract for 3500 machines.

Contracts for more than $30,000,000 worth of war trucks have been placed by the Government, and it is expected that $10,000,000 will be expended on horse-drawn vehicles. Among these contracts are those given below.

U. S. Truck Co. Holds Information Contest

CINCINNATI, Nov. 3—The United States Motor Truck Co. is conducting an unusual kind of sales contest for the purpose of securing information to be used in sales promotion. Sales representatives have been dividend into three classes, (1) salesmen working for distributers; (2) distributers themselves; and (3) district representatives of the company. Each week for a period of 10 weeks the contestants will receive ten different questions and will be asked to seek the answers and send them to the contest board. All questions in each set must be answered before the next set is sent to any individual, and the correct answers are sent out within two weeks of issue. The questions asked require considerable investigation and will tend to make the salesmen think in an intelligent manner. Not only are the technical points of the truck together with its operation covered, but also the questions enter into the various phases of salesmanship in the various classes of business. Replies to date have been very carefully answered and the company expects to obtain much valuable data. Prizes will be awarded to the winners in each group.

THESE FACTORIES HAVE GOVERNMENT CONTRACTS

Company	Amount	Kind	Price
Packard Motor Car Co	3,000	3-ton trucks	$3,197
Pierce-Arrow Motor Car Co	1,500	1½-ton trucks	3,500
Locomobile Co.	1,250	1½-ton trucks	4,071
Ford Motor Co	2,500	Ambulances	475
General Motors Co	1,000	1½-ton chassis	1,989
Kelly-Springfield Truck Co	1,225	3-ton chassis	3,100

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National Association To Let In All Dealers

Not Necessary for Dealer to Be Member of a Local—Representatives Go to Washington

CHICAGO, Nov. 5—A broadening of the scope of the National Automobile Dealers Association was the chief action taken by the directors of this organization at their formal meeting in Chicago Saturday. When the association was organized last year, it was to comprise only dealers who belonged to local dealers' organizations, but Saturday's action throws the membership open to individual dealers.

The Association was formed in Chicago July 9, and since that time little has been heard from it. However, the organization has been working quietly, and its efforts so far have been chiefly devoted towards increasing its sphere of influence. It has organization membership in all but two states and in thirteen of these there is very complete representation.

The proposed Government move toward insisting on car manufacturers concentrating on munition making was a subject of the directors' deliberation, and it was decided to have three of the eastern directors meet with officials of the National Automobile Chamber of Commerce with reference to their participation in the conference between the manufacturers and the Government this week. These will be John MacAlman and John H. Johnson of Boston, and A. E. Maltby of Philadelphia.

Dodge Brothers Receive $30,000,000 Ordnance Contract

DETROIT, Oct. 31—According to an announcement made here to-day, John F. and Horace E. Dodge have received a contract from the Government calling for $30,000,000 worth of ordnance, and are to finance the undertaking without outside aid. Some time ago a 40-acre site for a factory was purchased at Lynch Road and Mt. Elliott Avenue, and the ground for the factory was broken this morning. It is planned to rush the factory to completion and to have it in operation in the early part of next year, giving employment to about 8000 men.

For some time rumors have been afloat that the half-completed plant of the Saxon Motor Car Corp. was to be purchased, completed and used for the fulfillment of this contract. However, this arrangement is superseded by Dodge Brothers taking over the contract and constructing a plant of their own.

Chicago Men Issue Prospectus

CHICAGO, Nov. 2—The Chicago manufacturing members of the National Association of Automobile Accessory Jobbers have issued a prospectus, or de luxe catalog, of their local organization, which meets twice a month and is one of the active local units in the parent body. This prospectus is done in colors, is encased in a brown embossed cover, is well illustrated, shows maps of the city, tells the history of Chicago, names the members of the group and extends an invitation to the trade to visit Chicago.

Mason Tire Co. Extends Line

NEW YORK, Nov. 5—The approaching completion of several new buildings by the Mason Tire & Rubber Co., Kent, O., brings with it the announcement that the line will be greatly enlarged. A cord tire with the letter M used as a non-skid design will be ready for 1918 delivery. A full line of rubber accessories will be made, including hook-on and laced boots, blowout patches, tire plasters, reliners, tread gum, cementless patches and a full line of repair materials, including fabric, rubber and cements. The only change in the present line will be the redesign of the Lattice non-skid and Ribbed tread models so that the high crown is eliminated and better wearing qualities thus secured.

Expect Stegeman Changes

MILWAUKEE, Nov. 3—Important changes in the control of the Stegeman Motor Car Co., Milwaukee, manufacturing Stegeman 6-cylinder, worm-drive trucks, are about to take place, according to well defined reports. It is said that Oscar Stegeman, founder and chief engineer of the company, will retire as president and general manager to make other connections. It has been known for some time past that Arthur Davidson of the Harley-Davidson Motor Co., Milwaukee, has gained a large financial interest in the company and probably will divide his time between the big motorcycle manufacturing plant and the Stegeman factory. At the offices of the company it was said that a statement may be forthcoming later.

To Continue Smith Form-a-Tractors

CHICAGO, Nov. 1—An arrangement has been made whereby the product of the bankrupt Smith Form-a-Tractor Co. will continue to be manufactured for the benefit of its creditors. At the time of the filing of the bankruptcy petition the company was without working capital and was unable to convert its assets into a marketable form. Since then the Smith Motor Truck Corp. has agreed to purchase the parts that are lacking and manufacture the tractor company's product. The Smith Motor Truck Corp. will market the tractors at its own expense and will store the tractor parts until needed for the tractors, at which times it will pay cash for the parts. The receiver, Edwin D. Buell, will dispose of the machinery which the motor truck corporation will not need in carrying out this agreement, and the money so received will be available for distribution to the creditors. It is estimated that the machinery of the defunct company is worth approximately $20,000 and the invoice value of he tractor parts is approximately $80.000. If this price can be realized from the assets it is believed creditors will receive nearly 100 cents on the dollar.

Should Car Dealers Sell to Prospective Soldiers?

Moratorium Bill to Be Considered at Next Session of Senate Puzzling Distributers

NEW YORK, Nov. 3—Should a man who is likely to enter military service, voluntarily or by selection, be listed as a prospect by an automobile dealer?

Some of the dealers along Broadway are asking themselves this question in view of the moratorium bill that was passed by the House Oct. 4 and that will be considered when the Senate convenes in December. The spirit of this bill is that a soldier cannot be prosecuted at law until his return from the war, which would tend to prevent dealers suing on unpaid time payments. Of course, the average man would not take advantage of such a bill by buying a car when he knew he might have to go to war, but at least one factory has notified its dealer of the possibilities.

International Receives Government Order

NEW YORK, Nov. 3—The International Motor Truck Corp. has received an order from the United States Government for trucks valued at more than $4,000,000. The contract calls for the delivery of 500 trucks by Jan. 1, 1918, and 200 a month each in January and February. The trucks are all of the new A-C Mack model, varying from 5½ to 7½ tons. In addition the contract also calls for the delivery of 200 trucks a month after the first 900 are furnished. The contract calls for a minimum purchase of 900 trucks, the maximum being determined by the time when the Government avails itself of the cancellation clause, which states that the Government may cancel further shipments on giving 60 days' notice.

Six More Accessory Exhibitors

NEW YORK, Nov. 5—Six new accessory exhibitors have been added to the national shows. These are:

New York—Challoner Co., Oshkosh, Wis.; Guarantee Liquid Measure Co., Pittsburgh; Kales Stamping Co., Detroit; Otis Elevator Co., New York; Wire Wheel Corp. of America., Buffalo, N. Y.

Chicago—Air Device Co., Chicago; Challoner Co., Oshkosh, Wis.; Guarantee Liquid Measure Co., Pittsburgh; Wire Wheel Corp. of America, Buffalo, N. Y.

Wagner Gets DeTamble Plant

INDIANAPOLIS, Nov. 4—The Wagner Axle Co. of Chicago last week purchased the plant of the DeTamble Motors Co. of Anderson, Ind. A. G. Wagner, president of the company, said that the company would manufacture a worm-drive axle, and that work would be started as soon as possible on a large contract for the government. A force of men now is employed in preparing the factory building for occupancy.

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Ford Must Distribute $30,000,000 of Profits

Dodge Brothers Win Suit Preventing Erection of Blast Furnaces —Ford to Appeal

DETROIT, Oct. 31—After a long period of litigation, the Ford Motor Co. has lost the suit brought against it by John F. and Horace E. Dodge, and under the decision rendered by Judge Hosmer of the Wayne Circuit Court is compelled to distribute approximately $30,000,000 in special dividends. The following are in brief the important points of the decision rendered by the judge:

1. The Ford Motor Co. is not a monopoly within the lines forbidden by the Sherman anti-trust law.
2. Fifty per cent of the 1915 profits—approximately $30,000,000—must be distributed as special dividends, as per Dodge Brothers' request.
3. The proposed blast furnaces at River Rouge are not a necessary feature of the Ford business, and cannot be built by Ford Motor Co. money. Ford personally may do so.
4. A corporation may not, against a stockholder's objection, hold its profits without distribution.
5. It is held that the capital stock of the Ford company means also its capital assets, which are larger than that permitted by law, which was $25,000,000 at the time the suit was started.
6. The division of the profits is to be arranged by the parties concerned, and if no agreement is reached, the court will decide.

Ford will doubtless carry an appeal from this decision to the highest court in the land, and will continue the construction of the River Rouge smelting furnaces under his own financial resources.

Texas Oakland Men Gather

DALLAS, Nov. 5—Oakland dealers in Texas met here last week in annual meeting to discuss conditions throughout the State, and especially to discuss business conditions. While here the dealers were the guests of C. L. Zutavern, president of the Texas Oakland Co. The attendance was more than double that of last year's annual meeting.

The dealers declared the high price of cotton and other farm products has placed a surplus amount of money in the pockets of the farmers of the State, and it was pointed out that hereafter the Texas farmers will be the men who will most invest in automobiles. Those attending the meeting were:

Roy G. Parker, Dallas; G. L. Buhl, Texas Oakland sales manager; G. W. Madison, sales manager for the American Commercial Co., Cleveland; C. L. Zutavern, president Texas Oakland Co.; Jack W. Neal, San Antonio; W. H. Masten, general sales manager, Pontiac; Thomas F. Howe, director, Chicago; J. T. Simmons, San Antonio; W. B. Murdaugh, Greenville; D. L. Fritz, Wichita Falls; George Ackley, Gainesville; Bill Lampke, Dallas; J. T. Batchler, Ferris; Stewart Moore, Waxahachie; J. G. Kerby, McKinney; Will Moore, Waxahachie; W. R. Hill, McKinney; W. A. Dunnahoo, Houston; S. O. Erdnan, Bay City; A. C. Williams, Houston; F. A. Weaver, Groveton; Sam H. Amsler, Macgregor; C. T. Banister, Corsicana; T. D. Humphrey, Waco; M. J. LaDue, Dallas; John Yanta, Runge; T. C. Meek, Cuero; H. H. Cullen, Austin; J. W. Greenwell, San Antonio; W. E. Love, Jr., San Antonio; E. W. Lein, Pontiac, Mich.; E. T. Wilson, San Antonio; French Davis, Dallas; J. P. Kresy, Dallas, and T. J. Larvency, Temple.

Stewart Will Exhibit at New York and Chicago

NEW YORK, Nov. 5—The Stewart-Warner Speedometer Corp. will exhibit at both the New York and Chicago national shows. Through an inadvertence the company's name was omitted from the Chicago show list.

LaCrosse Tractor to Expand

LACROSSE, WIS., Nov. 3—The LaCrosse Tractor Co., LaCrosse, Wis., will purchase new machinery and equipment to enable the company to increase its output from 75 to 100 per cent. An addition to the plant will be erected early in 1918.

10-Mile World Record Is Put Up by De Palma

In Packard with Aviation Twelve Engine He Covers Distance in 5 Min., 17⅖ Sec.

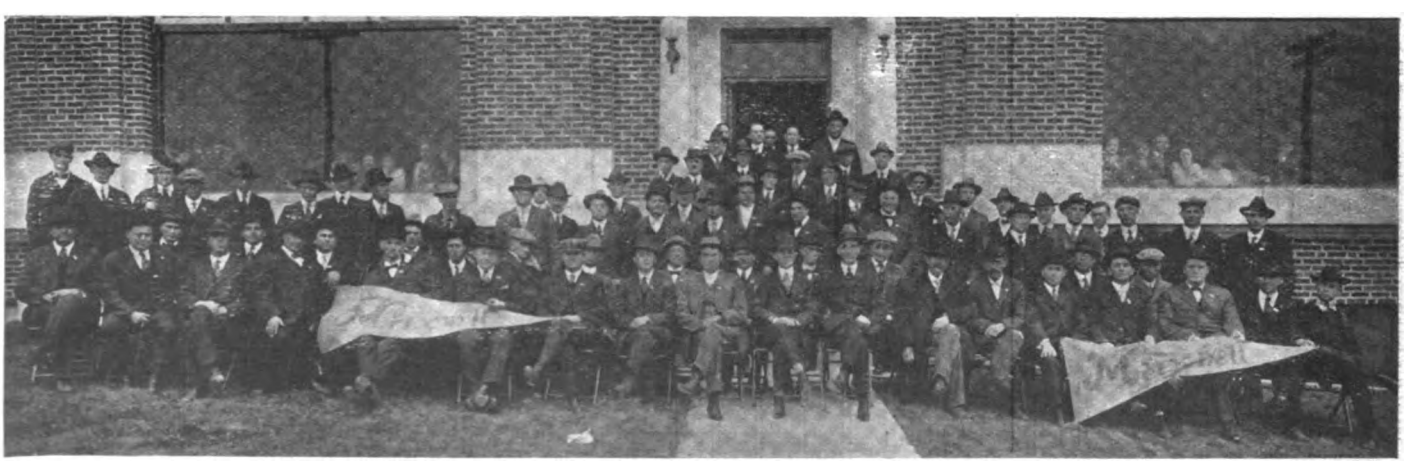
NEW YORK, Nov. 2—Ralph De Palma broke the world's record for 10 miles for cars in the 231-300 non-competitive class at the Sheepshead Bay Speedway to-day by shooting his Packard twelve racer over the line in 5 min. 17 2/5 sec., at the rate of 113.7 m.p.h. This eclipses the previous record made by Hornsted in a Benz at Brooklands track, England, on Jan. 2, 1914, in the time of 5:19.78, or 112.6 m.p.h. The world's free-for-all mark was set by Rader in a larger Packard twelve some time ago on the same track in 4:50.88, or 120.5 m.p.h. De Palma's time, caught at each lap of two miles, was 1:03 3/5, 1.03 3/5, 1:04, 1.02 1/5, 1.04.

His original intention was to beat the 1-hour record, but after three promising attempts which were spoiled by tire trouble he abandoned the idea. It is possible that he may try again next week.

In each case tire failure, which was due entirely to the high speed, was first indicated by a swelling appearing on the tread caused by liquid forming underneath, with the result that soon the rubber gave way, leaving bare canvas.

In the first drive on the hour record he covered 10 miles, averaging about 108 m.p.h. In the second effort the tires called a halt after about 12 miles, his average being 110, and in the third he reached the 68-mile mark at a speed of slightly over 108 m.p.h.

De Palma's car has a twelve-cylinder overhead valve engine with a bore of 2 21/32 and a stroke of 4½ in., giving a piston displacement of 299.2 in. The wheelbase is 112 and the weight 2580. Goodyear cord tires were used, 34 x 4½ front and 35 x 5 rear. Bethlehem spark plugs were employed.



KANSAS CITY, Nov. 3—A new $400,000 assembling plant with a capacity of 100 cars and 45 trucks per day was opened in Kansas City this week by the Maxwell Motor Sales Corp., and assembling was begun on a limited scale. By the first of next year it is expected to do capacity work, employing 300 men.

The Kansas City plant will assemble, not only the territory's quota of 11,000 cars for this year, but also the cars that will go to parts of Nebraska, Iowa and Colorado. The Kansas City territory comprises Kansas, Missouri, Oklahoma and Arkansas. A $750,000 stock of parts will be carried here.

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Milwaukee Protests Ruling on "Star" Tags

New Law, Effective Jan. 1, Would Restrict Dealers' License Plates —Fees Up, Too

MILWAUKEE, Nov. 3—Upon becoming familiar with the provisions of the amendments made by the 1917 Wisconsin Legislature to the state motor code with respect to registration by dealers, motor car men of Milwakuee and the entire state are up in arms over the drastic regulations to be imposed on January 1, 1918, and will seek a remedy immediately.

The Milwaukee Automobile Dealers, Inc., is backing the attempt to modify the law. It recently received an opinion from the attorney general of Wisconsin to the effect that after January 1, so-called "star" tags, or dealers' license plates, may be used only on demonstrating cars. Even cars used by dealers in the ordinary course of business cannot be equipped with the "star" plates, according to the opinion. Service cars must have a distinct number. A dealer driving a shipment of new cars from a depot to his garage would have to use separate plates on each machine. The new regulations create other annoying and confusing situations which it is being sought to remedy.

The 1917 Legislature increased all registration fees, private owners being required to pay $10 per annum instead of $5 after January 1. Dealers' licenses are increased from $10 per annum to $25. The provision relating to dealers' licenses says in part: "All automobiles, motorcycles or other motor vehicles owned or controlled by such manufacturer or dealer, except those for his private use, shall, until sold or let for hire, be regarded as registered under such general distinguishing number."

The attorney general's opinion says in part: "In contemplation of this statute, a dealer or manufacturer is not supposed to use any of the motor cars for his own private use or for hire when he is intending to sell the same to customers. If a dealer or manufacturer intends to let out a car for hire or to use one for his private use, either for his family or his business, it is necessary for him to have the car so used regularly registered."

Gov. E. L. Philipp recently announced that he would call a special session of the Legislature early in December to consider legislation made necessary by developments in the situation with respect to Wisconsin's participation in the world war, and dealers are urging him to include in the call the object of modifying the registration law without delay.

Kneip Heads Baltimore

BALTIMORE, Nov. 5—W. F. Kneip was re-elected president of the Baltimore Automobile Dealers' Association. At the meeting the announcement was made that the Baltimore Automobile Show will be held at the Fifth Regiment Armory, from January 22 to 26. Securing the armory depends very much on what the war condition is. Other officers elected were: Vice-president, L. E. Lambert of the Lambert Auto Co., Hudson distributers; secretary-treasurer, W. L. Duck, Baltimore manager for the Winton Co. H. M. Luzius, secretary of the Automobile Club of Maryland, was elected general manager of the association. The Board of Governors includes the three chief officers and Donald Anthony, manager of the Locomobile Co.'s branch in Baltimore, and A. H. Bishop, manager of the Autocar Co.'s branch. The following committee was appointed by President Kneip to represent the Commercial Car Dealers: Lee Syster, manager of the International Motor Co.; A. W. Owens, Kelly-Springfield Co.; R. J. W. Hamill, manager of the Packard Co., Baltimore; Theodore E. Straus, president United Auto Sales Co., and A. H. Bishop.

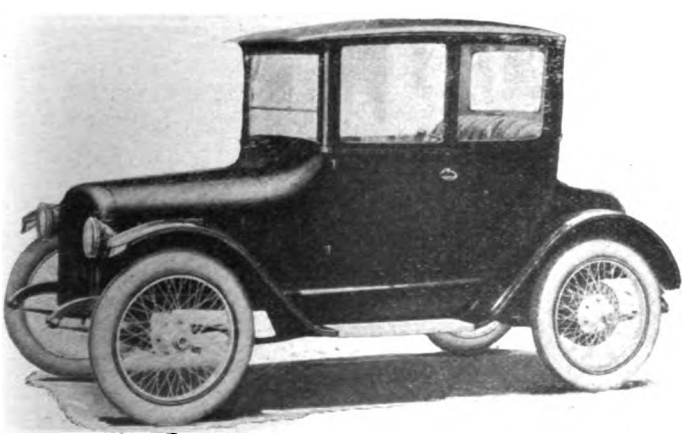
Plan No Disturbance of Chalmers Dealers

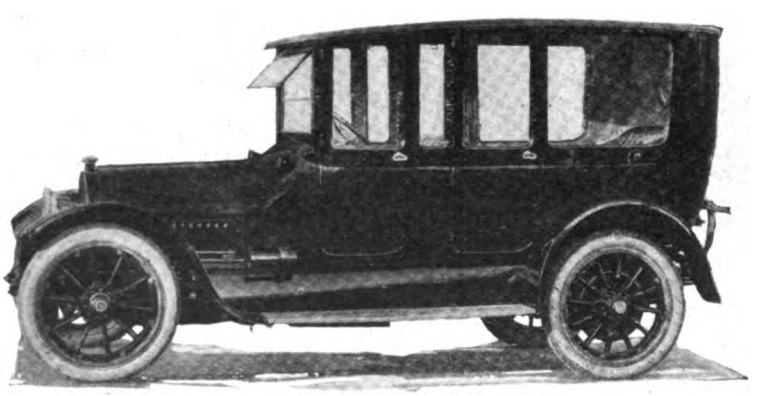
Maxwell-Chalmers Combination Purely Financial—Policies of Neither Altered

DETROIT, Nov. 2—There has been considerable misunderstanding among dealers concerning the Chalmers-Maxwell combination and its probable effect on the future policy of the Chalmers company. The combination is purely financial, and does not materially affect the policy of the Chalmers company, except in an administrative way. The Maxwell Motor Co., Inc., has taken a five-year lease on the plant and equipment of the Chalmers Motor Co. Walter E. Flanders is president of both companies and T. J. Toner, director of sales of the Maxwell company, is now vice-president of the Chalmers company. During the term of the five-year lease, it is the intention of the Maxwell officials to retain all of the characteristic qualities of the Chalmers car and not to disturb the established policies of the company. The dealer organization of the Chalmers company is particularly not to be disturbed at this time, and Chalmers production is going forward and will continue to go forward under the direct control of the new administration. Walter E. Flanders has backed the above statement with $200,000 which will be forfeited if the Chalmers Motor Co. does not out-produce 50 per cent of the other manufacturers at present making touring cars and roadsters in the Chalmers class during 1918, and 33 per cent of them in the following year.

Briscoe Increases Production

JACKSON, MICH., Nov. 5—The Briscoe Motor Corp. has increased its production from 25 or 30 cars per day to 50 or 60 per day, and has increased its organization slightly.





The new model 76 Detroit Electric, manufactured by the Anderson Electric Car Co., is a three-passenger, convertible roadster type, and resembles the conventional gas driven coupe. It is supplied either in cobalt blue with a blue stripe, or in special green gray, with a green stripe. The upholstery is Turkish type whipcord padded with genuine curled hair. The price is $2,175.

The Erdman-Guider Co., Detroit, is specializing in the construction of winter tops for Cadillac cars. The sides are metal and the roof leather, with all window and door corners rounded and the large front pillar eliminated. Upper windows in all doors drop. The body is trimmed in gray Bedford cloth and includes a flush dome light. Being painted black, the top harmonizes nicely with the Cadillac colors. The price of the top for the type 53 1916 seven-passenger touring car is $300, and that for the models 55 and 57 is $350.

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Prominent Tradesmen Assume New Duties

Resignations and Promotions Place Workers in New Places

Lawrence Broering has been added to the sales force of the Mason Tire & Rubber Co. His headquarters will be in Chicago.

William A. Reynolds is district manager for the Goodyear Tire & Rubber Co. in New York City, succeeding A. A. Lyon, who is now special representative. Reynolds was formerly in the industrial development department.

C. W. Lynn is district manager of the H. B. Browning Auto Co., Cole distributer, Toledo, having left the Parker Automobile Co., Haynes distributer.

F. F. Wood is manager of the new sales and service station at 236 Ottawa Avenue, Grand Rapids, Mich. He was formerly assistant sales manager for the Grant Motor Car Corp. of Toledo, and was with the Ford Motor Co. of Detroit for several years.

William B. Tepoorten, formerly with the engineering department of Holley Bros., Detroit, has taken the local retail agency for the Master primer and is opening a service station on Jefferson Avenue.

P. D. Sampsell is assistant sales manager of the United States Motor Truck Co. in charge of the Ohio, Indiana, and West Virginia territory.

W. C. Hull is district manager in the southwestern field for the Commerce Motor Car Co., Detroit. He was formerly with the Ross Motor Car Co.

John H. Hartzell is district sales manager for the Federal Motor Truck Co., Detroit, having the territory south of the Ohio River.

Frank Briscoe, formerly of the Briscoe Mfg. Co., is captain in the Signal Corps, Aircraft Division, of the United States Army, and is at present in Washington.

A. E. DeCiercq has resigned as metallurgical engineer for the Chalmers Motor Co. to join the Wright-Martin Airplane Co., New Brunswick, N. J., in a similar capacity.

Alan Jamison has been appointed special representative of he Burd High Compression Ring Co., Rockford, Ill., with headquarters at Baltimore.

F. C. Batcheider, until recently with the White Co., Cleveland, has been appointed factory representative of the Burd High Compression Ring Co., Rockford, Ill.

H. A. Oswald has been appointed manager of the body division for the Elgin Motor Car Corp., with headquarters in Chicago.

G. A. McKinney, formerly with Hart Bros., Maxwell distributer, has been appointed zone manager for the Southwest Kissel Kar Co., Dallas. He succeeds A. G. Blair.

A. L. Platt has been appointed manager for the B. F. Goodrich Rubber Co., Dallas. He succeeds P. H. Dingle, who has gone to Kansas City.

Ralph C. Kirk, who for several years has been selling Paige cars in Texas, has been appointed retail sales manager for the Yesnor Motor Co., Dallas.

J. L. Justice, formerly Pacific Coast zone supervisor for the Maxwell Motor Sales Corp., with headquarters at San Francisco, has been made supervisor for the Dallas zone, which comprises Texas, Louisiana, Arkansas, Oklahoma and New Mexico. His headquarters will be at Dallas.

Herman Loeffler has joined the sales department of the Duplex Truck Co., Lansing, Mich. He will represent the company in the eastern states.

Hal McNaughton has become assistant advertising manager of the Champion Spark Plug Co., Toledo.

A. H. D. Altree, one of the pioneers in the magneto field, has resigned as vice-president of the Bosch Magneto Co., his resignation taking effect Jan. 15. He has been in the main office here since 1914, having been transferred from the Chicago branch where he was manager.

Texas After Gas Dopers

DALLAS, Nov. 3—Acting on reports that adulterated gasoline was being sold to Dallas consumers, the city authorities of Dallas recently ordered an investigation, but the probe did not disclose any adulterations.

Tractor Tests for England

LONDON, ENGLAND, Nov. 3—The great interest in farm tractors and the necessity for tractors in order to increase agriculture in England with diminished labor have led to the decision to hold in August, 1918, very extensive tractor trials which will rival in technical nature the famous reliability trials of automobiles held in England many years ago. It is proposed in these 1918 trials to test the tractors in many ways.

Moutier Boys Get Out a Book

PEORIA, ILL., Nov. 2—The Crown Auto Co., operated by the seven Moutier brothers, who have always been persistent and original advertisers, has issued a 20-page booklet, 9 x 6, entitled "The Dawn of a New Era in Garage Efficiency." It is well illustrated and tells the story of the company's growth and service. It is being effectively used throughout this section.

DETROIT, MICH., Oct. 19—The offices of the Air-O-Flex Automobile Corp. at 570 Penobscot Building have been materially increased in order to speed up the manufacturing plans of the company.

Silver Plans Service To Cover Territory

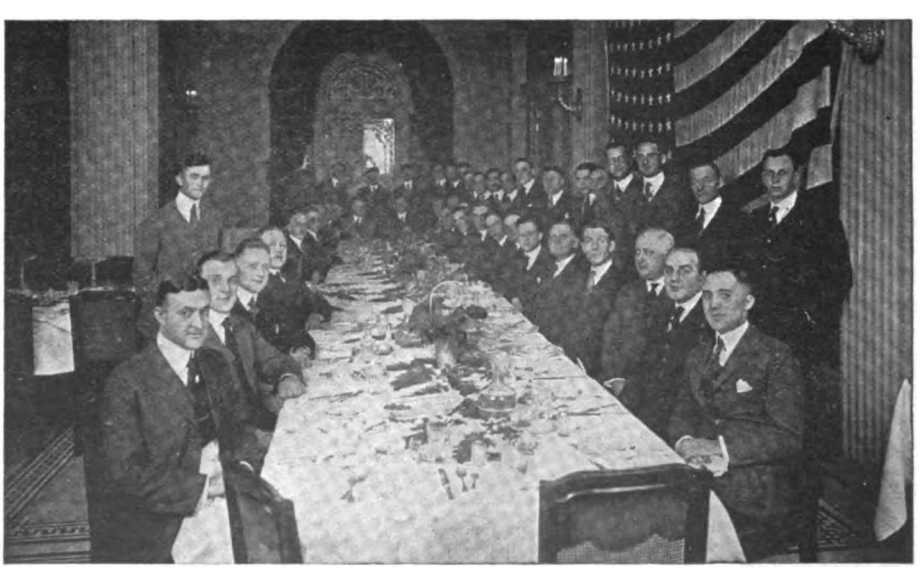
"Silver Service Stations" and "Associate Silver Dealers" Will Honor Coupons

NEW YORK, Nov. 3—A new plan of distribution and service is being put in operation by C. T. Silver, in the interests of purchasers of Silver-Apperson and Kissel Silver-Special cars, which are soon to make their debut in New York. The new plan is of interest to garagemen.

Briefly the plan is as follows: Any garage possessing first-class service facilities can be appointed a "Silver-Service-Station" and "Associate-Silver-Dealer" by agreeing to render efficient service for which Silver will pay at the rate of $1 per hour on any Silver-Apperson or Kissel Silver-Special, in addition to which it will be empowered to sell cars and parts on a commission basis.

Every Silver-Apperson or Kissel Silver-Special, whether purchased from Silver's establishment on Broadway at West Fifty-seventh Street or from one of his "associate dealers," will be guaranteed for one year instead of the customary ninety days, and to avoid controversy and difference of opinion as to the limit of free service, every purchaser will receive a Silver Service Book containing fifty service coupons, each coupon good for one-half hour of free service at any Silver Service Station. These coupons will be redeemed at the rate of $1 per hour, thus enabling the service station to render all service at a reasonable profit.

Silver's organization will show cars, give demonstrations and assist associate dealers in making sales. His salesmen will work on such a basis that the origin of a sale will make no financial difference to them.



Salesmen of the Mason Tire & Rubber Co. gathered recently for a two-day convention at the factory in Kent, Ohio. Business plans for the coming year were discussed and one day was devoted to an inspection of the factory. The banquet was held at the Portage Hotel, Akron, at which John H. Diehl, sales-manager, was toastmaster.

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Automobile Business in Savannah Dull

Trade in Rural Districts, However, Brisk—Medium-Priced Cars Fast Sellers

SAVANNAH, Oct. 31—Retail trade in the city of Savannah, according to a prominent dealer, is not at all what it ought to be. He assigns various reasons for this. Among them he says the high and advancing prices of almost every necessary article makes prospective customers a little shy about putting their money in automobiles.

It is said, though, that this season of the year is not by any means the best, but that it could be a great deal better than it actually is. The high price of tires, tubes and the general rumor that gasoline is going up and that there is likely to be a shortage of it makes for poorer business in the automobile world.

Although the above condition holds good for the city proper it is by no means applicable to the country districts. In the rural districts "is where the money is," according to dealers. The country people are buying all sorts of cars and the dealer who has territory which takes in some part of the farming district is indeed lucky, for what is being lost in the city trade is more than made up for in the country.

Georgia Farmer Prosperous

The Georgia farmer is enjoying his most prosperous year and does not hesitate to put his money in a motor car or truck. A dealer near Savannah, who has the agency for Maxwell cars, reports that he has recently sold 18 cars to negroes alone. This is something almost heretofore unheard of. In times past the negro in the rural districts was lucky to own one passable horse, but now with cotton selling at record high level prices a new motor car standing in front of a dilapidated shack is no unusual sight.

Dealers report that the medium and high price cars are easier to get now, but still say it is almost impossible to get any of the cheaper makes of cars. For some time the situation in Savannah looked very acute, for dealers were either unable to get cars at all or else have had to wait weeks and weeks for deliveries. Now this situation has eased up considerably. Dealers are now able to get medium and high-priced cars, and although the trade in the city proper has lost some of its former snap they are selling like hot cakes in the country.

Truck Business Good

As to the truck situation dealers say conditions here could be no better. Not only are the farmers buying trucks but business men in the city are investing in them because they are cheaper in the long run to operate than horse-drawn vehicles. Salesmen for the Varn-Johnson Motor Co., who handle Vim and Reo trucks, report they are able to dispose of trucks with little trouble. On account of the high prices of feed for live stock many business houses are discarding their teams and using fewer number of motor trucks than they did teams and getting better and more economical results, according to them.

Automobile users who depend on dry cells, and there are still quite a number of such, are facing a somewhat embarrassing and unique situation in Savannah. According to the owners of the Electric Construction & Fixture Co., one of the largest electrical houses in Savannah, there is a dry-cell famine in Savannah. This company has none in stock and although orders were sent in some time ago none have been received. Inquiries bring to light the fact that all over Savannah, in the garages and electrical houses, there are not enough dry cells to satisfy the demand for any length of time. The price of dry cells has been advancing steadily and a couple of weeks ago they were selling at 40 cents each. It is not considered at all improbable that with the arrival of a new stock the price will have advanced to 50 cents each or more.

The county fair season is on in full blast in south Georgia now, and with it comes a tremendous business for the small town gasoline and repairmen. Almost everyone in the country now attends the fairs in his own car and of course the dealers in supplies and accessories in the fair towns and along the highways do a rushing business. It is the banner season of the year for the country dealers.

25 Leak-Proof Men in Service

ST. LOUIS, Oct. 31—The McQuay-Norris Mfg. Co. has raised a service flag that shows 25 stars on the field for members who have enlisted. Nine of the enlistments were from the factory, two from the office and 13 from the field force. Nearly all of the enlistments are in the engineer or aviation corps, as most of the men are expert mechanics.

Rusty Springs Best for Rough Roads and Speed

Pennsylvania S. A. E. Discusses Car Construction—Ideal Spring Not Yet Found

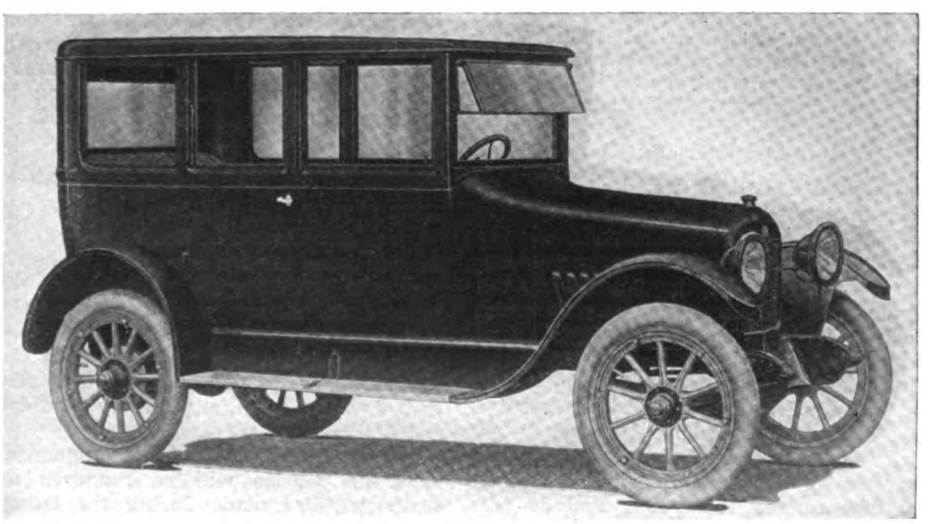
PHILADELPHIA, Oct. 31 — Rusty springs are better for very rough roads and high speed; but for moderate speeds on smooth roads, such as city pavements, well-lubricated springs are best. This, in brief, is the conclusion reached at the monthly meeting of the Pennsylvania Section of the Society of Automotive Engineers, held here. About thirty engineers attended the session, which is the first of a series that will take up "The Elements of Car Construction Affecting Easy Riding." Subsequent meetings will take up the relation of upholstery to this problem, wheels and tires and shock absorbers.

In opening the discussion, Walter C. Keyes, Chief Engineer of the Standard Parts Co., Cleveland, stated that there is no outstanding superiority in the riding qualities of any particular type of spring. "If any one type had proven consistently superior," he said, "it would have been adopted by car makers, just as the bevel gear has."

Factors Affecting Comfort

The three factors affecting riding comfort are (1) tires, which absorb small vibrations and bumps of perhaps 2 or 3 in.; (2) springs, which absorb all the larger shocks, and (3) upholstery, which absorbs the small shocks and vibrations.

The consensus of opinion of the meeting appeared to be that no spring as yet designed realizes the ideal; that regardless of type, elliptic, semi-elliptic, cantilever, platform, or otherwise, the spring unaided is not capable of giving that degree of riding comfort which may be considered ideal.



CHICAGO, Oct. 31.—The Elgin Motor Car Co. is marketing a new sedan model which is to sell for $1645. This is a Springfield type with two doors. The upholstery is Bedford cloth. Among other features, the car has an adjustable steering wheel and a heater. Body and running gear are black with silver striping.

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1918 Montreal Show to Outshine Predecessors

Many Cars New to Canada to Be Exhibited—Accessories Also to Be Shown

MONTREAL, Nov. 3—The 1918 Montreal show will undoubtedly be the best that Montreal has seen. An entire floor amounting to 45,000 sq. ft. of floor space will be given up to the exhibition of cars and accessories. Several makes of cars new to Eastern Canada will be shown for the first time. Manager T. C. Kirby has made public the following list of exhibitors:

Albion Motor Co., Republic and Smith Form-A-Truck and tractor; Briscoe Motor Car Co., Briscoe; S. F. Bowser & Co.; Canadian Consolidated Rubber Co.; Champion Ignition Co.; Canadian Asbestos Co., Dixon's graphite; Cutten & Foster, slip covers and tops; Chouinard, J. I., Murray cars; Canadian Fairbanks Morse Co.; Cadillac Motors, Ltd., Cadillac; Champion Spark Plug Co.; Dixon Vulcanizing Co., accessories; Dunlop Tire & Rubber Goods Co.; Elgin Motor Co., Elgin; Express Oil Co.; Fehr Bros., batteries; Ford Motor Co., Ford cars, trucks and tractors; Frigon & Baker, Winton and Chandler cars and Chase trucks; Goodyear Tire & Rubber Co.; Gutta Percha & Rubber Co.; Gray Dort Motor Co., Gray Dort cars; Grant Distributing Co., Grant; Girdwood Lamb Motor Co., Reo cars and trucks; Hyslop Bros., accessories; Imperial Oil Co.; International Electric Co., batteries; Jennings & Co., Kelly trucks; K. & S. Canadian Tire Co., Kelly tires; Legare Automobile Co., G.M.C. trucks, Hudson, Chevrolet and Franklin cars; Lavoie & Lavoie, Stanley steamer; Liquid Air Co.; Lariviere, Inc., Pathfinder car and accessories; Montreal Motor Sales, Dodge; Maxwell Motor Co., Maxwell; Mutual Motor & Truck Co., Locomobile, Marmon, Roamer, Scripps-Booth and Rolls Royce; John Millen & Son, accessories; McLaughlin Motor Co., McLaughlin cars and trucks; National Motor Co., National; Northern Electric Co., accessories; Paige Motors of Montreal, Paige; Primm Motor Sales Co., Stutz; Renaud Motor Supply Co., accessories; Thoor Trudeau Carriage Co., commercial bodies; Vehicle Motor Co., Studebaker and Chalmers; Walker Hardware Co., accessories; Weaver Auto Equipment Co.; White Motor Co., White cars and trucks; Willys-Overland Co., Overland cars and trucks.

Moto-Pep Officially Tested

INDIANAPOLIS, Oct. 31—The first official economy and acceleration tests in which equipment recommended by the Society of Automotive Engineers has been used was made in determining the value of a combined fuel energizer and carbon remover called Moto-Pep. The tests were sanctioned by the American Automobile Association and supervised by Chester Ricker, technical representative of the A. A. A. on a Maxwell.

At speeds from 15 to 40 m.p.h., the increase in economy for the Moto-Pep mixture ranged from 10½ and 20 per cent. At a speed of 10 m.p.h., the gasoline alone gave 19 m.p.g., and the Moto-Pep mixture nearly 30, but at speeds immediately above and below this, the records show less economy for the Moto-Pep mixture. These tests were at a temperature of 50 deg. Fahr. But on a warmer day at 80 deg. Fahr., when gasoline was alone tested, the Maxwell showed 27½ m.p.g. at all speeds from 18 to 26 m.p.h. Acceleration for both fuels was the same at all speeds as determined by Gallup's electrical recording apparatus. Moto-Pep is a liquid designed to increase the fuel value of gasoline and was used in proportion of one-fifth ounce per gallon of gasoline.

Post Office Department Inaugurating Interurban Transportation

WASHINGTON, Nov. 1—Washington is to be the radiating center for the first big experiment by the Post Office Department in interurban motor transportation of parcel-post mail, the idea of the department being ultimately to extend this service between many of the cities of the country, thus bringing the producer and consumer of the essentials of life in close touch. The initial route is to be between Washington and Baltimore, a distance of forty miles.

Mexico Buys Tractors

DALLAS, Nov. 3—The Carranza government of Mexico this week spent $100,000 in Texas in purchasing tractors and graders for work in Mexico. The purchases were made by General Alfreda Brecedia, head of the Mexican Army and a member of the Carranza family. Of this amount $50,000 was invested in Avery tractors, the deal being closed by C. A. McCline, Dallas, manager. The machinery will be shipped to Mexico at once. Mexico, the general said, is planning a system of highways and the tractors and graders are especially needed for this work.

HAL and Abbott Plan Merger

CLEVELAND, Nov. 3—A plan has been proposed for the merging of the Abbott Corp. and the HAL Motor Car Co., both of Cleveland. The directors will meet soon to decide if the proposition shall go through. If the combination is effected the company will continue to make HAL twelve and the Abbott six cars, and will also produce a truck. The combined capitalization of the two companies is over $1,000,000.

Six Days and No Overtime in Seattle

SEATTLE, Oct. 31—The Motor Car Dealers Association of Seattle is running the following advertisement in the newspapers in 9 x 10 space: "Following the demand for shorter working hours, the motor car dealers of Seattle will close their respective establishments, both the service and sales departments, promptly each day at 6 p. m. and all day Sundays and holidays.

"In conformity with this announcement no service will be rendered or demonstrations made during the closed period.

"We respectfully request all motor car and truck users to co-operate with us in this movement to create better working conditions for our employees."

Los Angeles Dealers Seek Light on Car Tax

Are Puzzled as to Its Application—Many Refrain from Advertising Prices

LOS ANGELES, Oct. 30—Dealers and distributers controlling California and Arizona territory are in a disturbed state because of the need for a rearrangement of prices resulting from the application of the war tax. At a recent meeting it was decided to call upon local Internal Revenue officers for enlightenment.

Practically all wholesalers are also retailers and the question they want answered is whether they are entitled to any differentation on cars sold wholesale and retail. They are also bothered about the application of the tax on used cars and new cars sold under a lease-contract.

Dealers state that the retroactive feature of the tax will cost them thousands of dollars, as they will not be able to collect from purchasers who have bought cars on condition bills of sale since Oct. 4. The present form of lease-contract provides that purchasers shall pay the tax. Some dealers are refraining from advertising car prices until more definite information is available concerning the application of the tax; others are adding 3 per cent to the factory list price of cars received since Oct. 4 and are also adding 3 per cent to the freight.

New Apperson Ready Soon

KOKOMO, IND., Nov. 2—A new Apperson eight, which varies somewhat from the preceding model, will make its appearance soon. Most of the changes are refinements in engine and in body line. Apperson claims for its engine that it is different from any other eight now used. It uses but one camshaft and two cam gears. Using but one camshaft, whereas in usual construction there are two, eliminates many movable parts. Valve caps and rod arms are inclosed, yet are so covered as to be easily accessible. The new models will be offered in seven-passenger and Chummy roadster bodies, and this holds good both for the eight and the six-cylinder types.

Acme Adds 4-Ton Model

CADILLAC, MICH., Nov. 2—The Cadillac Auto Truck Co. has added a 4-ton model to its line which now includes 1-, 2- and 3½-ton models as well. The new truck will be styled Model D and is similar to the others. It has a Continental type E engine with Rayfield carburetter and Stewart feed and Eisemann Magneto. Transmission elements include a three-speed Cotta gearset, and Timken axles. The wheelbase is 168 in. and the loading space 156 in. Front tires are 36 x 5 single and rear 40 x 5 dual. The price of the chassis is $3,700.

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The Kaiser Has Tires But No One Else Has

Germany Hard Hit by Lack of Rubber and Tires Sell for $350 When Obtainable

NEW YORK, Oct. 31—The Kaiser is the only one in Germany using pneumatic tires, according to Victor Van der Linde, of the B. F. Goodrich Rubber Co., who has just returned from a tour of Europe. No tires are obtainable in Germany and Austria. In Holland they cost $350, in Spain $125, in Russia and Italy $100, and in England and France $90.

German scientists have tried to improvise for the scarcity of rubber by compounding what they call synthetic rubber, says Van der Linde. But in this they have been unsuccessful. There is not an ounce of crude rubber in Germany, and therefore it is devoid of fiber. This synthetic rubber has cost about fifteen times more a pound than the vegetable.

The situation of both Germany and Austria in regard to tires is deplorable. Countries bordering the Central Empires, with the exception of those that are at war with them, are in just as bad plight. Most casings are stuffed with compressed cork, paper, rags and sausages made of ground cork.

Some have even been filled with sand and dirt. This only refers to those cars that have ragged casings left. Most automobiles have ground away their shoes and move about on rims bound with rope. There is not one bicycle tire left in Germany outside of those on military bicycles. Raids by the wholesale were conducted in shops and residences, and all bicycle tires seized. In fact, everything in rubber has been reclaimed for tire construction and submarine battery cells.

Gasoline is as big a problem as tires, according to Mr. Van der Linde. In no country can it be had without government permit, and in Germany prices are practically prohibitive.

An automobile trip of 200 miles in Germany would cost the average German $200 in gasoline alone. Gasoline costs the German and Austrian $6 a gallon, the Hollander $1.50, the Frenchman $1.25, the Spaniard $1.10, the Italian $1 and the Englishman 95 cents.

Spain has taken advantage of its neutrality to build up a big automobile industry, and has built truck haulage systems equal to our railroads. Shortage of railroad equipment forced Spain to adopt the truck as the chief means of travel.

New York Out of Sales Congress

NEW YORK, Oct. 31—The Salesmanship Club of New York has voted to withdraw from the World's Salesmanship Congress, which was formed two years ago and which has held two annual meetings in Detroit. The New York club's resolution was to the effect that the Congress is of no benefit to the club, and that the withdrawal is until such time as the Congress does become of benefit.

The club has experienced difficulties with the management of the Congress, maintaining that the Detroit headquarters of the movement has been dictatorial and not co-operative. The club proposes to go ahead with its work, being well financed, and to carry through a good winter's program.

Kansas City to Have Automobile Factory

KANSAS CITY, Oct. 31—Kansas City's first automobile factory will be in full swing by Jan. 1. The Beggs Wagon Co., which for 25 years has been building a farm wagon which is known to every farmer in this section of the United States, has changed its name and product. Hereafter it will be known as the Beggs Motor Car Co. It is a half-million-dollar corporation. S. M. Beggs is president of the new company, Judge C. F. Hutchings vice-president and general counsel, J. S. Lapsley vice-president and assistant secretary, C. G. Prouhet is secretary, and Earl Akers, former Kansas St te Treasurer, is treasurer.

War Stimulates Car Business in Canada

Number of Owners in Province of Manitoba Doubled Since 1914—Purchasers Mostly Farmers

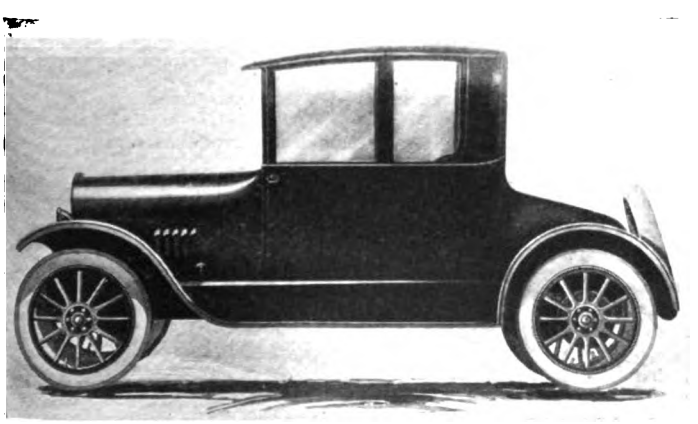
WINNIPEG, Oct. 31—Has the Province of Manitoba suffered financial loss through the war? If the extraordinary increase in privately owned automobiles in this province during the three years of fighting can be taken as any criterion, the answer is "No"—decidedly not.

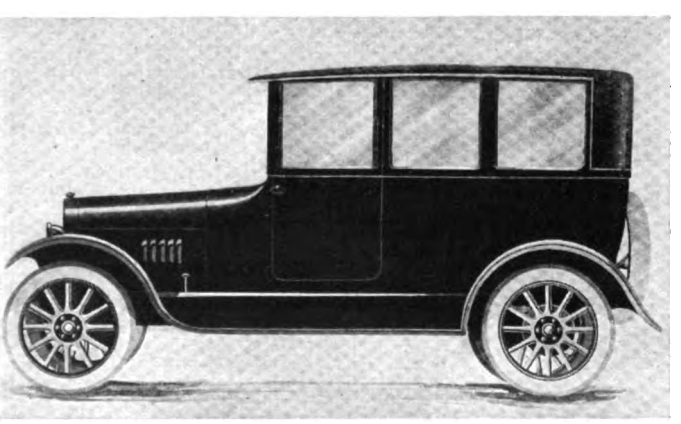
In 1914, when war was declared, there were registered at the provincial automobile license department 7000 privately owned cars. According to figures given out to-day at that office, 17,300 citizens of Manitoba now possess cars which they call their own. This figure does not include about 900 dealers.

The majority of car purchasers during the war period have not been city dwellers. More than 90 per cent are farmers or residents of rural Manitoba.

Of the 17,300 privately owned automobiles in Manitoba to-day only 5300 belong to Winnipeggers; the remaining 12,000 are owned by persons dwelling in rural towns or farms. The following statistics authorized by the provincial automobile license department illustrate how big crops, and bigger prices for those crops, have brought prosperity to the Manitoba farmer:

In 1914 there were 7000 private cars in the province. Winnipeg citizens owned exactly half this number and the rest of Manitoba the other half. In 1915 the total had increased to 8800 cars. Winnipeg's total had only increased 400, bringing the city's figure up to 3900. The remaining 4900 were owned by rural Manitoba. In 1916 the provincial total amounted to 10,900 cars. Again Winnipeggers only laid claim to 400 more than the previous year, while the rest of Manitoba increased by 1700, bringing the total ownership to 6600.





The Olympian Motors Co. of Pontiac has added a sedan and a coupe. These were made in the body shops of the Olympian plant. The coupe lists at $1,340, and the sadan for $1,565. The coupe is the flat top type with a very slight drop forward, in accordance with the latest dictates of closed car design. The seating arrangement is such that the driver's seat is slightly ahead of the passengers' seats, and the capacity is three passengers. The interior upholstery is a green pattern, having alternate weave of black and gray and black and blue. The frame work of the body is constructed of white ash.

The sedan is a Springfield type, manufactured by the Racine Body Co. of Racine, Wis., who are licensed under the Springfield patents. It is a full five-passenger type, two-door style, with divided front seats, giving 18 in. individual seating capacity and 26½ in. leg room. The rear seat is 20 in. deep and 48 in. wide; the door width is 26 in.

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Eldredge Buick Succeeds Northwest

SEATTLE, Nov. 3—The Eldredge Buick Co. has superseded the Northwest Buick Co., practically all of the members of the old company being retained. The officers of the reorganized company are: President, A. S. Eldredge; secretary, J. G. Fenton; treasurer, F. J. Koch; manager of Spokane house, E. C. Finley; sales manager, G. A. Purdy; A. R. Lindburg, sales manager in Spokane.

Plans Nashville Winter Show

NASHVILLE, TENN., Nov. 3—It has been definitely decided to hold a winter show in Nashville. It now remains for the committee on arrangements, of which Chas. H. Simpson is chairman, to designate the time and place of meeting. It is thought probable that the show will be held in February, and if the old Hippodrome skating rink can be obtained, this will probably be the place used.

Motor Car Securities Quotations

	Nov. 3, 1917 Bid	Asked
*Ajax Rubber Co.	51	52
*J. I. Case T. M. Co., pfd.	..	81
Chalmers Motor Co., com.	2	4
Chalmers Motor Co., pfd.	..	50
*Chandler Motor Co.	63½	64
Chevrolet Motor Co.	67	68
*Fisher Body Corp., com.	23	30
*Fisher Body Corp., pfd.	76	83
Fisk Rubber Co., com.	50	60
Fisk Rubber Co., 1st pfd.	100	105
Fisk Rubber Co., 2nd pfd.	85	95
Firestone Tire & Rubber Co., com.	98	101
Firestone Tire & Rubber Co., pfd.	98	101
*General Motors Co., com.	88½	89
*General Motors Co., pfd.	75	75½
*B. F. Goodrich Co., com.	36	38
*B. F. Goodrich Co., pfd.	98	99½
Goodyear Tire & Rubber Co., com.	148	151
Goodyear Tire & Rubber Co., pfd.	99	101
Grant Motor Car Corp.	2	4
Hupp Motor Car Corp., com.	2	3
Hupp Motor Car Corp., pfd.	82	88
International Motor Co., com.	8	11
International Motor Co., 1st pfd.	..	50
International Motor Co., 2nd pfd.	15	30
*Kelly-Springfield Tire Co., com.	41½	43
*Kelly-Springfield Tire Co., 1st pfd	80	85
*Lee Rubber & Tire Corp.	14	16
*Maxwell Motor Co., Inc., com.	27	29
*Maxwell Motor Co., Inc., 1st pfd.	57	59
*Maxwell Motor Co., Inc., 2nd pfd	14	17
Miller Rubber Co., com.	125	135
Miller Rubber Co., pfd.	99	101
Packard Motor Car Co., com.	120	130
Packard Motor Car Co., pfd.	94	97
Paige-Detroit Motor Car Co.	20	23
Peerless Truck & Motor Corp.	9	11
Portage Rubber Co., com.	117	121
†Regal Motor Car Co., pfd.	10	20
Reo Motor Car Co.	19	21
*Saxon Motor Car Corp.	..	7
Springfield Body Corp., com.	..	..
Springfield Body Corp., pfd.	..	..
Standard Motor Construction Co.	7	9
Standard Parts Co.	..	80
*Stewart-Warner Speed. Corp.	50	51
*Studebaker Corp., com.	35½	37
*Studebaker Corp., pfd.	84	96
Swinehart Tire & Rubber Co.	35	42
United Motors Corp.	18	18⅝
*U. S. Rubber Co., com.	53½	55
*U. S. Rubber Co., pfd.	97	98½
*White Motor Co.	34	35
*Willys-Overland Co., com.	18	19
*Willys-Overland Co., pfd.	75	78

*At close Nov. 3, 1917. Listed New York Stock Exchange. †Par value $10.

Coming—THE SHOW CALENDAR—*Events*

Shows

Los Angeles, Cal.	Motor Car Dealers' Assn., Billy Sunday Tabernacle. J. S. Conwell, Mgr.	Nov. 12-17
Denver, Col.	Automobile Trades Assn., Show Committee, Auditorium. G. A. Wahlgreen, Mgr.	Nov. 12-18
Akron, O.	Akron Auto Show Assn., Auditorium Armory. C. G. Armstrong, Mgr.	Dec. 3-8 1918
Ft. Dodge, Ia.	Ft. Dodge Auto Dealers' Assn. G. W. Tremain, Mgr.	January
New York, N. Y.	Salon, Automobile Salon, Inc., Astor Ballroom. John R. Eustis, Mgr.	Jan. 2-9
New York, N. Y.	Eighteenth Annual, Automobile Chamber of Commerce, Grand Central Palace.	Jan. 5-12
Kansas City, Mo.	Third Annual Tractor Show.	Jan. 11-16
Washington, D. C.	Carnival and Open House Week. Automobile Trade Assn. of Washington.	Jan. 11-18
Providence, R. I.	R. I. Licensed Auto Dealers' Assn., State Armonry. Percival S. Clark, Mgr.	Jan. 11-19
Philadelphia, Pa.	Seventeenth Annual, Philadelphia Auto. Trade Assn., Commercial Museum Bldg.	Jan. 11-19
Milwaukee, Wis.	Milwaukee Automobile Trades, Inc. Auditorium. Bart J. Ruddle, Mgr.	Jan. 13-24
New York, N. Y.	Motor Boat Show, Grand Central Palace, National Assn. of Engine & Boat Manufacturers.	Jan. 19-26
Montreal, Can.	National Motor Show of Eastern Canada. Montreal Automobile Trade Assn.	Jan. 19-26
Cleveland, O.	Seventeenth Annual, Cleveland Automobile Show Co., Wigmore Coliseum. Fred H. Caley, Mgr.	Jan. 19-27
Scranton, Pa.	Scranton Motor Trades Assn., Armory. Hugh B. Andrews, Mgr.	Jan. 21-26
York, Pa.	York Auto Dealers' Assn., Queen St. Tabernacle. T. F. Pfeiffer, Sec.	Jan. 21-26
Portland, Ore.	Motor Car Dealers' Assn., Armory. Jos. M. Rieg, Mgr.	Jan. 21-26
Mifflintown, Pa.	Automobile Trade Assn., Valley Stream Auditorium.	Jan. 22-26
Allentown, Pa.	Lehigh Auto. Trade Assn., Traylor Motor Co.'s Garage. P. W. Leisering, Publicity Mgr.	Jan. 23-28
Chicago, Ill.	Eighteenth Annual, Coliseum and Armory, National Automobile Chamber of Commerce.	Jan. 26-Feb. 2
Harrisburg, Pa.	Capital City Motor Dealers' Assn. J. Clyde Myton, Mgr.	Jan. 26-Feb. 2
Chicago, Ill.	Salon, Elizabethan Room of Congress Hotel.	Jan. 26-Feb. 2
Manchester, N. H.	Academy. Couture Bros.	Jan. 28-Feb. 2
Peoria, Ill.	Peoria Auto and Accessories Dealers' Assn. W. O. Ireland, Mgr.	February
Minneapolis, Minn.	Minneapolis Auto. Trade Assn., Walter B. Wilmot, Mgr.	Feb. 2-9
Kansas City, Mo.	Kansas City Motor Car Dealers' Assn., E. E. Peake, Mgr.	Feb. 9-16
St. Louis, Mo.	St. Louis Auto Mnfrs. & Dealers' Assn. Robert E. Lee, Mgr.	Feb. 11-16
Newark, N. J.	N. J. Auto Exhibition Co., First Regiment Armory. Claude E. Holgate, Mgr.	Feb. 16-23
San Francisco, Cal.	San Francisco Dealers' Assn., Exposition Auditorium. G. A. Wahlgreen, Mgr.	Feb. 16-24
Waterbury, Conn.	United Shows Co.	Feb. 18-23
Des Moines, Ia.	Des Moines Automobile Dealers' Assn., Coliseum. C. G. Van Vliet & Dean Schooler, Mgrs.	Feb. 18-23
Syracuse, N. Y.	Syracuse Automobile Dealers' Assn., State Armory. Harry T. Gardner, Mgr.	Feb. 18-23
Grand Rapids, Mich.	Automobile Business Assn. Klingman Building. Ernest T. Conlon, Mgr.	Feb. 18-23
Springfield, O.	Springfield Auto Trades Assn., Memorial Hall. C. S. Burke, Mgr.	Feb. 18-23
Pittsfield, Mass.	State Guard, State Armory. James J. Callagan, Mgr.	Feb. 18-23
So. Bethlehem, Pa.	Fourth Annual (cars 18-23; trucks 25-27), Coliseum. J. L. Elliot, Mgr.	Feb. 18-27
Brooklyn, N. Y.	Brooklyn Motor Vehicle Dealers' Assn., Twenty-third Regiment Armory. I. C. Kirkham, Treas.	Feb. 22-Mar. 9
	Commercial Vehicles.	Feb. 2-9
Cedar Rapids, Ia.	Cedar Rapids Auto. Trade Assn., Auditorium.	March
Kalamazoo, Mich.	Kalamazoo Automobile Dealers' Assn., Armory.	March
Omaha, Neb.	Omaha Auto. Trade Assn., Auditorium, Clark G. Powell, Mgr.	Feb. 23-Mar. 2
Boston	Boston Automobile Dealers' Association, Mechanics Building. Chester I. Campbell, Mgr.	Mar. 2-9
San Francisco, Cal.	Motor Truck Dealers of San Francisco, Auditorium. Ivan R. Gates.	Mar. 19-24
Trenton, N. J.	Trenton Auto Trade Assn., Second Regiment Armory. John L. Brock, Mgr.	Mar. 20-23
Stockton, Cal.	San Joaquin Auto Trade Assn. Samuel S. Cohn, Mgr.	Apr. 9-13
Springfield, Mass.	Auditorium Building, United Shows Co.	Dec. 3-8 1918

General and Racing

New York	Convention, National Assn. of Auto Accessory Jobbers, Hotel Astor.	Feb. 11-16

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Have you ever given Tungstens a tryout? Other dealers find they are giving splendid satisfaction to their trade and bringing repeat business—are easy to sell. They are not bothered with cut-rate mail-order competition (the dealer's hardest competition).

Are you playing into their hands by pushing articles advertised by them at cut prices?

Let us give you the name of your nearest Tungsten jobber.

Tungsten Mfg. Co.
Marshalltown, Iowa

TUNGSTEN
TRADE MARK REGISTERED
SPARK PLUG
Always on the job

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A LANDSLIDE

That's the Dealer Verdict on AJAX Dealer's Franchise

The Reasons Why

The Ajax Dealer's Franchise has met with quick success. Never before have tire dealers so enthusiastically endorsed a tire manufacturer's offer.

Why? Not one reason alone, but many reasons.

First—The inbuilt *quality* of all Ajax Tires—with a Guarantee in Writing 5000 Miles. Ajax Road King—a monarch in quality—a democrat in service; the utmost in tire value—for the motorist—for the dealer.

Second—The Ajax Dealer's Franchise gives you a new standard of protection, as the *Ajax Retail Store* in your locality.

Third—The Ajax Dealer's Franchise brings the direct co-operation of the *Ajax Dealers' Free Service Bureau,* with its merchandising experts to help you make money.

Fourth—It makes leadership certain for you—for the Ajax Dealer's Franchise is backed by a *National Advertising Campaign* amounting to hundreds of thousands of dollars.

And there are many other reasons

WRITE OR WIRE!

Territory being closed rapidly. WIRE COLLECT, or *rush coupon,* to learn if this money-making opportunity is still open for you!

97% Owners' Choice

Ajax Tires Guaranteed in Writing 5000 miles—are 97% Owners' Choice. This huge percentage of Ajax output is chosen by individual motorists to replace the tires that came on their cars.

Ajax Rubber Company, Inc.
1796 Broadway, New York City

"While Others are Claiming Quality,
We are Guaranteeing It" ~

RUSH THE COUPON

AJAX RUBBER CO., INC.,
1796 Broadway, New York City

I am interested in the Ajax Dealer's Franchise. Without obligation to me, send complete details.

Name .....

Address .....

City ..... State .....

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"X" welds leaky radiators without metal or fire!

EVERY thinking motorist realizes that if he neglects a leaky radiator he risks serious damage to his engine. And every time a leak develops, he faces the same problem—*what can be done about it?*

Between the repair man's bill of ten to twenty-five dollars for soldering leaks and the numerous "radiator compounds" offered him for a fraction of a dollar, the advantage seems to be all with the compounds.

But it is plainly apparent that when cements, powders, meals or glue are put into the cooling system, such solids must inevitably settle into the circulating space and cut down the efficiency of the cooling system.

"X" Welds Leaks in Ten Minutes!

Today thousands of car owners have found in "X" Radiator Liquid, the *final answer* to this problem. "X" is the first scientific preparation for the quick, *permanent* repair of leaks in the radiator, pump, connections, motor head gasket, and water-jacket of a motor car.

It has been on the market for nearly two years. Thousands of motorists are using it. Every alert dealer in auto supplies is selling it—and his business in "X" is growing every day.

"X" is not a "radiator compound"—but a scientific process of welding without metal or fire.

You simply pour "X" into the radiator. It instantly combines with the water, and circulates throughout the cooling system. Whenever "X" in solution with water, flows through a leak, the action of the oxygen in the air immediately changes it to a *metallic solid*, forming a *permanent weld right in the hole.* The roughest road vibration cannot loosen it—and it will withstand a pressure of over 500 pounds.

Makes Radiators Rustproof and Scaleproof!

Now it is a remarkable fact that in addition to sealing leaks, "X" Radiator Liquid neutralizes the corrosive elements in water. In this way it prevents the metal from rusting. Moreover, it holds in the water the mineral matter which would otherwise form scale on the metal walls. Thus "X" keeps the inside of the cooling system clean and bright and the water passageways free and clear.

Improves All Water Cooling Systems!

85% of the water cooling systems are choked up by rust and scale—causing overheating and poor engine performance. *Your cooling system will be measurably improved by the use of "X".*

Beware of imitations! Don't put anything into your car that you're not *sure* about.

"X" is recommended by radiator manufacturers and endorsed by automobile engineers. It is the only scientific process for making cooling systems Leakproof, Rustproof, Scaleproof.

$1.50 Size does a $25 Repair Job
Ford Size 75c, does a $10 Repair Job

No bother, no tinkering, no fuss—nothing to take apart. Just pour "X" in and it works automatically. Keep "X" in the water constantly; it is a preventative as well as a cure.

"X" LABORATORIES, 630 Washington St., Boston, Mass.

Factory Representatives:
Gray-Heath Co., Chicago; Hughson & Merton, San Francisco
Asch & Co., New York; Sanford Bros., Chattanooga, Tenn.

Distributors for Canada:
Canadian "X" Laboratories, Walkersville, Ontario

"X" TRADE MARK RADIATOR LIQUID

DEALERS! Get this EXTRA PROFIT Assortment

Special Offer to Dealers



Display Stand and $1.50 Can FREE!

"X" Liquid works in alcohol or other anti-freeze solution. You can sell a good many cans during the winter months. Keep "X" in stock. Every motorist that walks into your store should walk out with a can of "X".

$1.50 in EXTRA PROFIT

The special assortment of nineteen cans of "X" includes twelve 75-cent cans and six $1.50 cans. Also one $1.50 CAN FREE. Assortment costs you $12—sells for $19.50. Selling literature, posters, etc., included in each assortment.

Ask Your Jobber, or Write Direct Today

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SUNDERMAN
Vacuum Carburetor

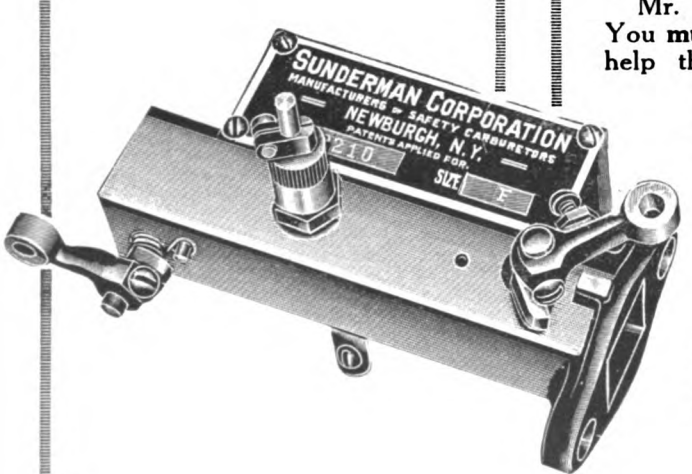
$6

F. O. B.
Newburgh

For other cars the prices are $8 and $10, depending on the fittings required. Its service is supreme on all makes and models of cars.

Save with the
SUNDERMAN

Start Easily in Cold Weather—and start NOW. The Sunderman is the ideal winter carburetor—and it's a winner all the year around.



Easy Starting Makes Quick WINTER Sales

Simply by following the plain printed directions, car owners can get summer starting ease with the Sunderman Carburetor.

It is designed to overcome all previous carburetor difficulties—it is built on a scientifically **proved,** different fundamental principle which does the work every day of the year.

The SUNDERMAN Mixing Principle Insures All-Year-Round Supremacy

Dealers who have not yet sold these carburetors can find an easy method of introducing them to their trade because of this exceptional winter feature.

And, **remember**—easy starting is only one of the big talking points, more important now and for the next few months.

ECONOMY—the saving of from 30 to 50% in gasoline consumption on any car—assumes redoubled sales importance in view of the national movement to save gasoline.

Car owners can pay their war taxes out of the money saved in gasoline by the Sunderman Carburetor.

At the same time—in addition to **easy starting** and this **assured economy,** the Sunderman Carburetor will win on its greater power, flexibility, pick-up and hill-climbing ability.

Mr. Dealer, your duty is plainly set before you. You **must** help car owners **save gasoline.** You **must** help them **start** their cars **easily.** You **must** insure them **better carburetion.** The nation demands **economy**—the industry demands **efficiency**—and you must keep the cars running.

Therefore—

Send for Our Proposition—Order a Sample Carburetor—and Begin at Once to Do Your Bit

Sunderman Corporation

9 Chambers Street Newburgh, N. Y.

Western Office: 403 Kresge Building, Detroit

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STEPHENS *Salient Six*

Nine Vital Betterments

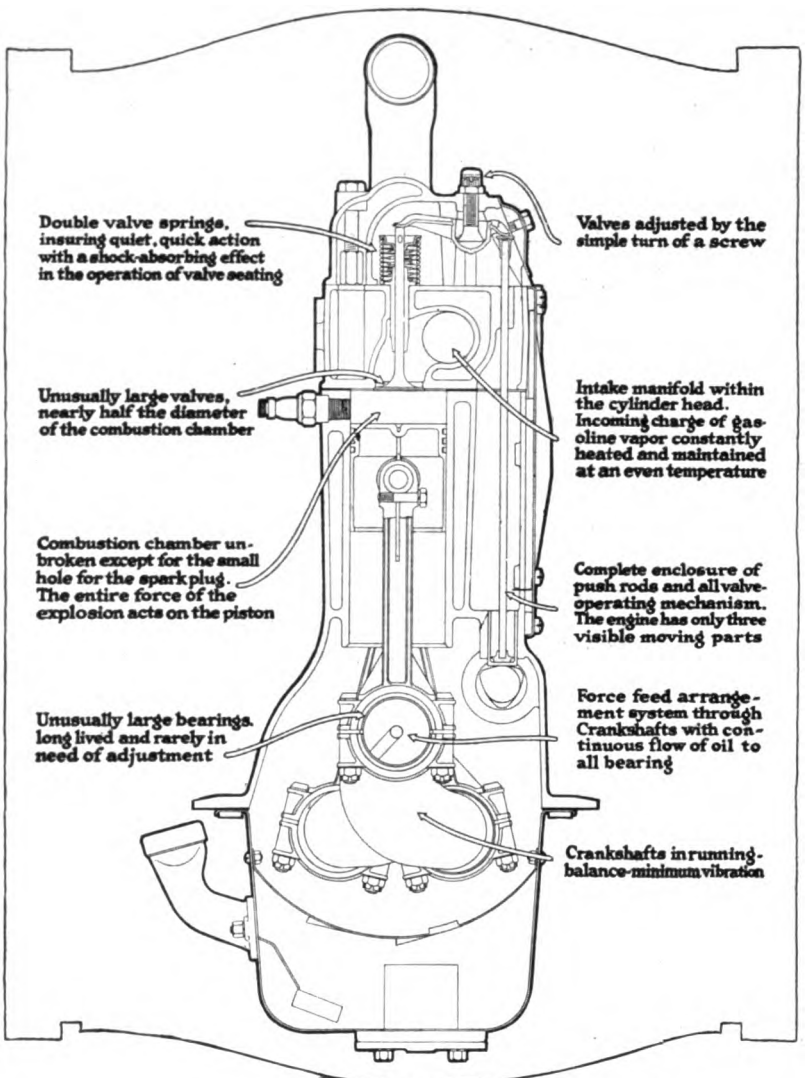
Nine examples of superior design which make the Stephens Salient Six engine the most advanced engineering achievement ever offered to the motoring public. They are captioned on the cross section.

The combined functioning of these nine features, together with an engine assembly which follows most modern engineering practice, give:

An engine of almost human response.
An unusually high power for size.
A complete burning of the fuel.
A reserve energy for emergencies.

This perfected overhead-valve engine drives a car designed to uphold a reputation. The car is as iron-clad as its maker. The bodies are conservatively distinctive. The cushions are deep and "sinky." The ample springs and perfect weight balance level the rough spots.

TWO MODELS:
Five-passenger Touring
Three-passenger Roadster
$1485
F. O. B. Freeport, Illinois.



Stephens Motor Branch
of Moline Plow Co., *Moline, Illinois*

Factory: Freeport, Illinois

Dealers: Our name lends prestige. Our car fairly shouts superiority.



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MARSHALL of MILEAGE

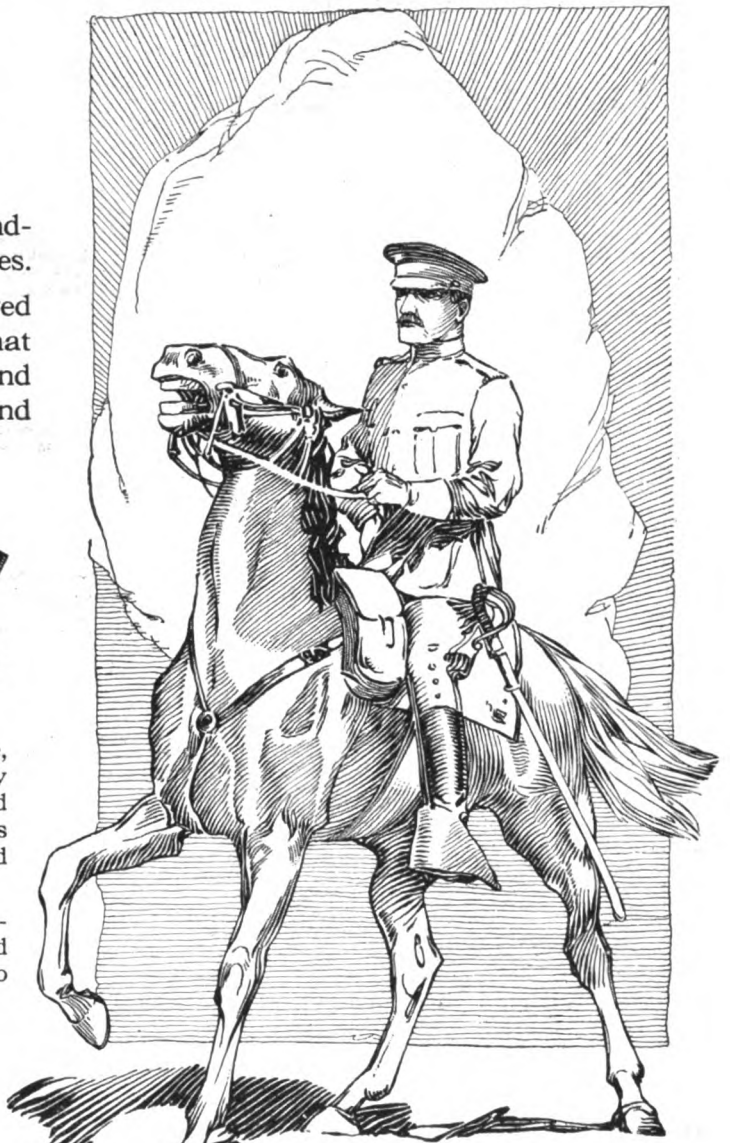
This tire stands first with commanding service records among other tires.

So faithfully is the pledge of prolonged service built into Globe Tires that hardly a tire is ever returned, found even slightly lacking in *long* life and *great* mileage.

GLOBE TIRES

HAND MADE · GUARANTEED 6000 MILES

REDUCE THE OPERATING COST OF YOUR CAR



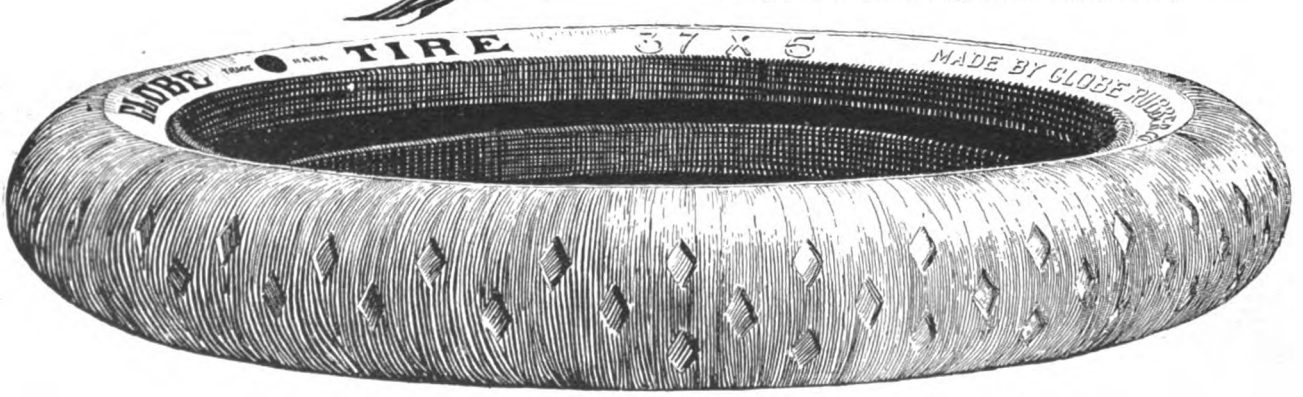
The carcass, which is the life of the tire, and the part you cannot see, is guarded by a double breaker-strip of rubber-saturated fabric, welded to carcass and tread by walls of live plantation gum. This shatters and dissolves the impact of blows.

The Globe Tread, built like a multiple-leaved spring, radiates and discharges road shocks instead of transmitting them into the tire.

Long Mileage Tires MUST Be Hand Made

GLOBE RUBBER TIRE MFG. CO.
Executive Offices: 1851 Broadway, New York City
Factory: Trenton, New Jersey, U. S. A.

Responsible firms are invited to ask us about the liberal advertising we do at our expense in their home newspapers on behalf of Globe distributors, handling Globe Tires on our special distributors' contracts. Exclusive, adequate territory will be given to those who qualify.



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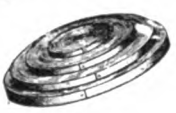
Sell More Fan Belting

This Free Rack will Help you

"Goods well displayed are half sold. This convenient new rack displays your fan belting and increases sales proportionately. Also enables you to keep your goods all together in one place and lends attractiveness to your store.

Sent free to dealers ordering fast-selling assortment of our fan belting. Write for further details. Use coupon.

And here is fan belting that moves quickly and will yield you splendid profits.



Wetprufe Fan Belting
(Flat)

Made of real belting leather, the best obtainable for fan belt use. Guaranteed waterproof, oilproof, heatproof. Laps plain or stitched. Serviceable, practically stretchless. Supplied in 50 or 100 ft. rolls, and in ½", ⅝", ¾", ⅞", 1", 1⅛", 1¼" and 1½" sizes.



Vee Sol Fan Belting
(Solid V)

Made of genuine belting leather and is waterproof, oilproof and heatproof. Two plies, thoroughly cemented and either bradded or sewed through the center with linen thread. Guaranteed not to crack. Furnished on 50 and 100-ft. spools in ½", ⅝" and ¾" sizes.



VEE FLEX Fan Belting
(Laminated V)

This fan belting designed for grooved pulleys. Each lamination overlaps the other and is securely riveted. Made of high grade oak-tanned leather and furnished on 50 and 100 ft. spools and in ½", ⅝" and ¾" sizes. Extra bolts gratis for endless fasteners.



LEATHEROUND Fan Belting
(Rounded)

A serviceable rounded fan belting for fans and other light drives. Made of oak-tanned leather—in either full round or regular. Comes in 100, 250, and 1,000 ft. spools, and commonly used in the following sizes: ¼", 5/16" and ⅜".

Hide, Leather & Belting Co., 227-D S. Meridian St. Indianapolis

RADIATOR HOOD LACING

BELT LACING

STRAPS

HLB ANTI-SQUEAK FRAME PADDING

FLEXIBLE METALLIC TUBING Etc., Etc.

Write for catalog showing complete HLB line

SIGN AND MAIL

Hide, Leather & Belting Co., Indianapolis.

Please tell me about your new display rack for fan belting, together with details of your attractive proposition for dealers. Also send samples and prices of

- Wetprufe Fan Belting
- VeeSol Belting
- VeeFlex Belting
- Belt Lacing
- Leatherround fan Belting
- Fan Belts for all makes of cars
- Ford Fan Belts

M. W. (Sign name and address in margin below)

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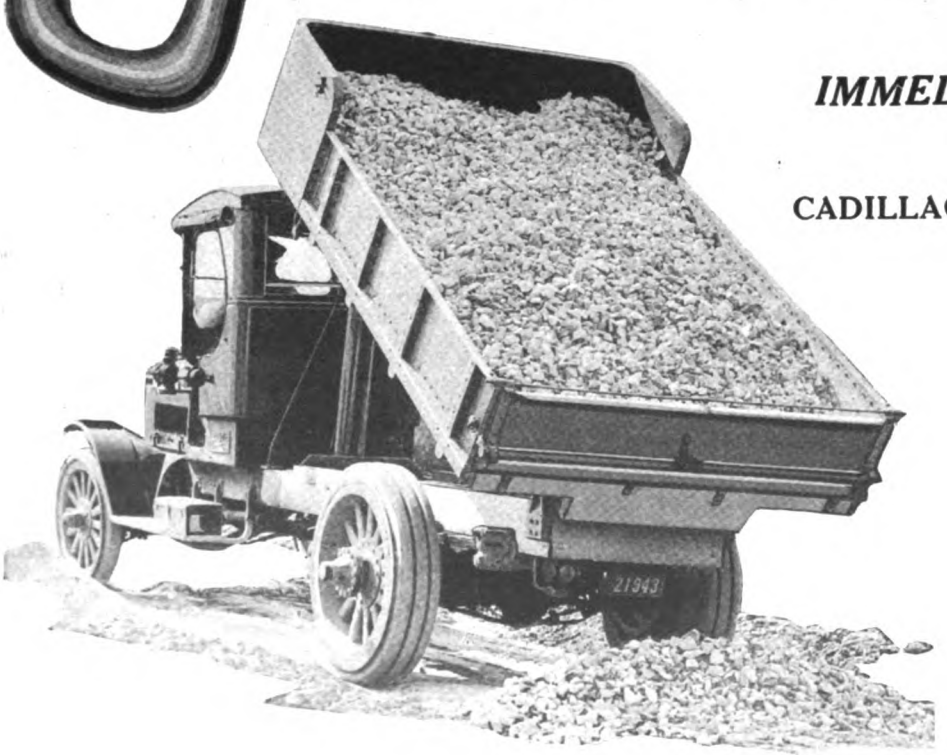


ACME

Trucks for the Spring 1918 are among the heaviest advertised trucks in America.

The campaign reaches more than a million selected men. It consists of 147 different ads that are to run consistently and steadily, month after month, in 26 men's magazines, from January to July.

The big theme in this campaign is the fact that the Acme is the Proved Unit Truck, and that the Acme seal shown in these advertisements is the bond of truck performance. Acme production for 1918 is doubled and the Acme advertising campaign will double dealers' profits.



IMMEDIATE DELIVERIES

CADILLAC AUTO TRUCK COMPANY
711 Mitchell St.,
CADILLAC, MICH.

The Seal of Dependable Service

ACME
THE TRUCK OF PROVED UNITS

Trade Mark Reg. U. S. Pat. Off.

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Your Link In The Success Chain In Selling Trucks Is the Coupon Below

Acme dealers are making big sales today because of their selling talk, *Acme Proved Units.* Think! When selling an Acme Truck you deliver the wonderful service by which Timken Bearings and Timken Axles are known—the service for which Continental Motors are famous—and such other proved truck units as stand *first* in the industry, as Detroit Springs, Pierce Governors, Stewart Vacuum System, and other dominant leaders in the truck unit field.

No buyer can make a mistake when you talk Timken and Continental to him. *He already knows you are talking the best there is.*

Consequently, selling Acme Trucks means selling *bonded truck performance,* for the Acme seal signifies the union of the unit leaders.

There is a great, substantial profit for you in the valuable franchise your territory represents if you secure the Acme line.

Mail The Coupon Today

The coupon is your link in the Success Chain. Take advantage of the opportunity—mail the coupon today.

Models: 1-ton 2-ton 3½-ton 4-ton

IMMEDIATE DELIVERIES

CADILLAC AUTO TRUCK COMPANY

711 Mitchell St.
CADILLAC, MICH.

The Seal of Dependable Service

ACME
THE TRUCK OF PROVED UNITS

Trade Mark Reg.
U. S. Pat. Off.

COUPON

Cadillac Auto Truck Co.,
711 Mitchell St.,
Cadillac, Mich.

Gentlemen:—

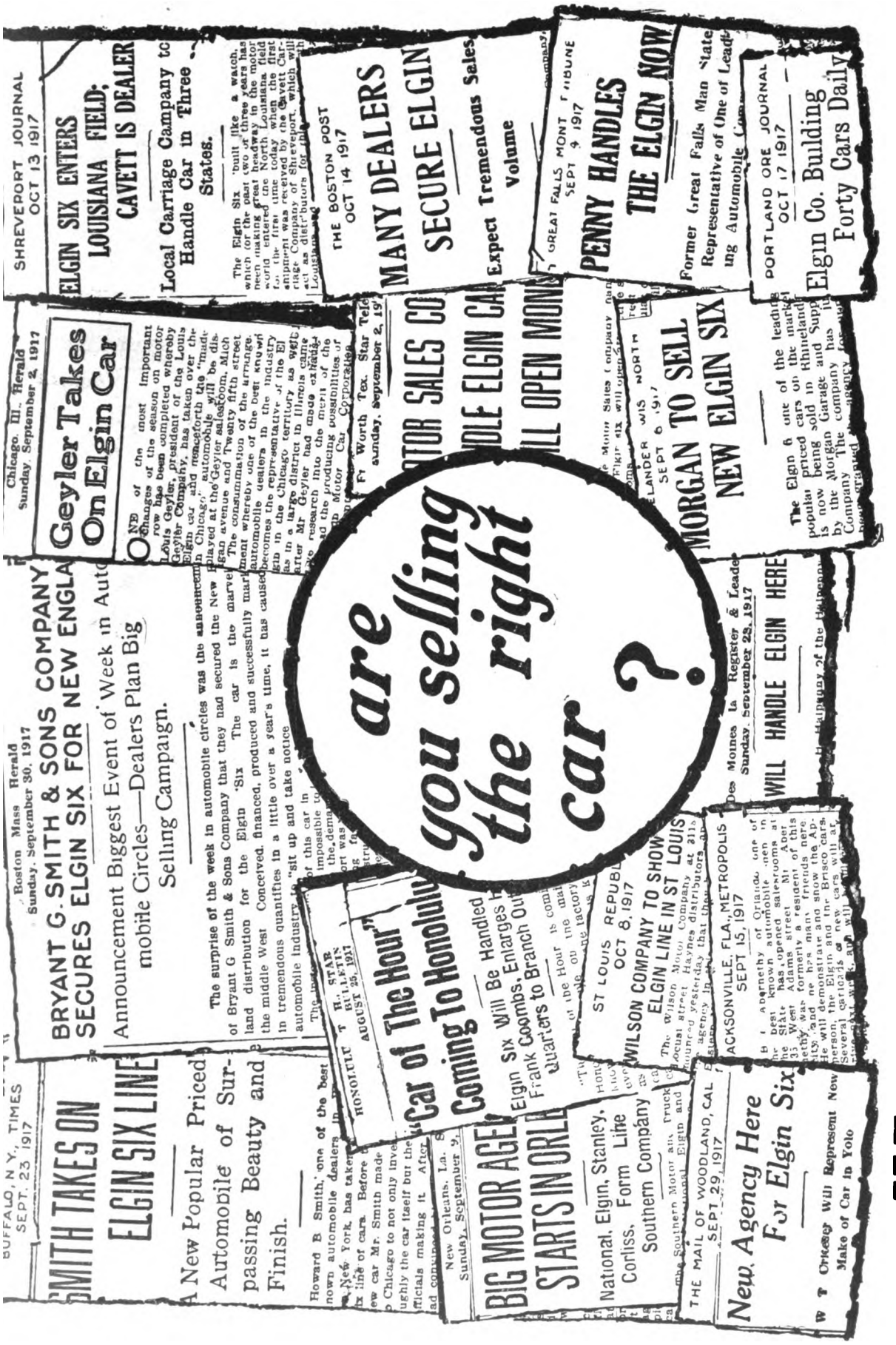
Mail me territory and discount information today.

Name .....

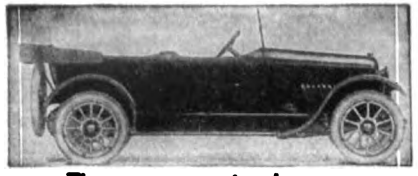
Street No. .....

City ..... State .....

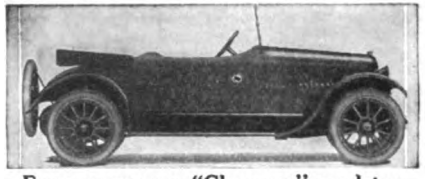
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Five passenger touring car, $1095—at Chicago



Four passenger "Chummy" roadster, $1095—at Chicago



Convertible Sedan. $1645—at Chicago

BECAUSE "live" dealers see "The Handwriting On the Wall." (Proven by the clippings above.)

They recognize that continued success is assured only by selling a good, popular priced car.

The Elgin Six has proven itself to be the most attractive and salable car in the world at its price.

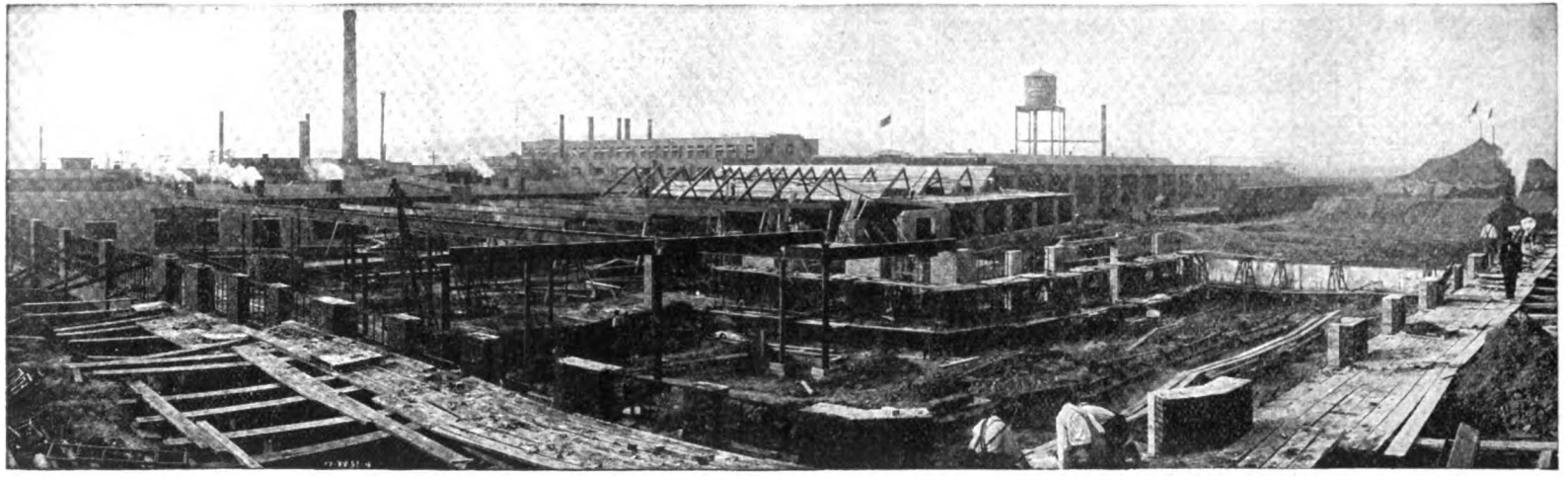
The extraordinary demand that has required an increase in production from 724 cars the first season to 7,776 cars the second season proves that the car buying public recognizes the superiority of the Elgin Six.

New factory buildings to further care for this increasing demand are fast being completed.

Territory is going fast. If yours is not already closed, wire us to hold open until you can discuss the matter with us.

Address Department 16-C

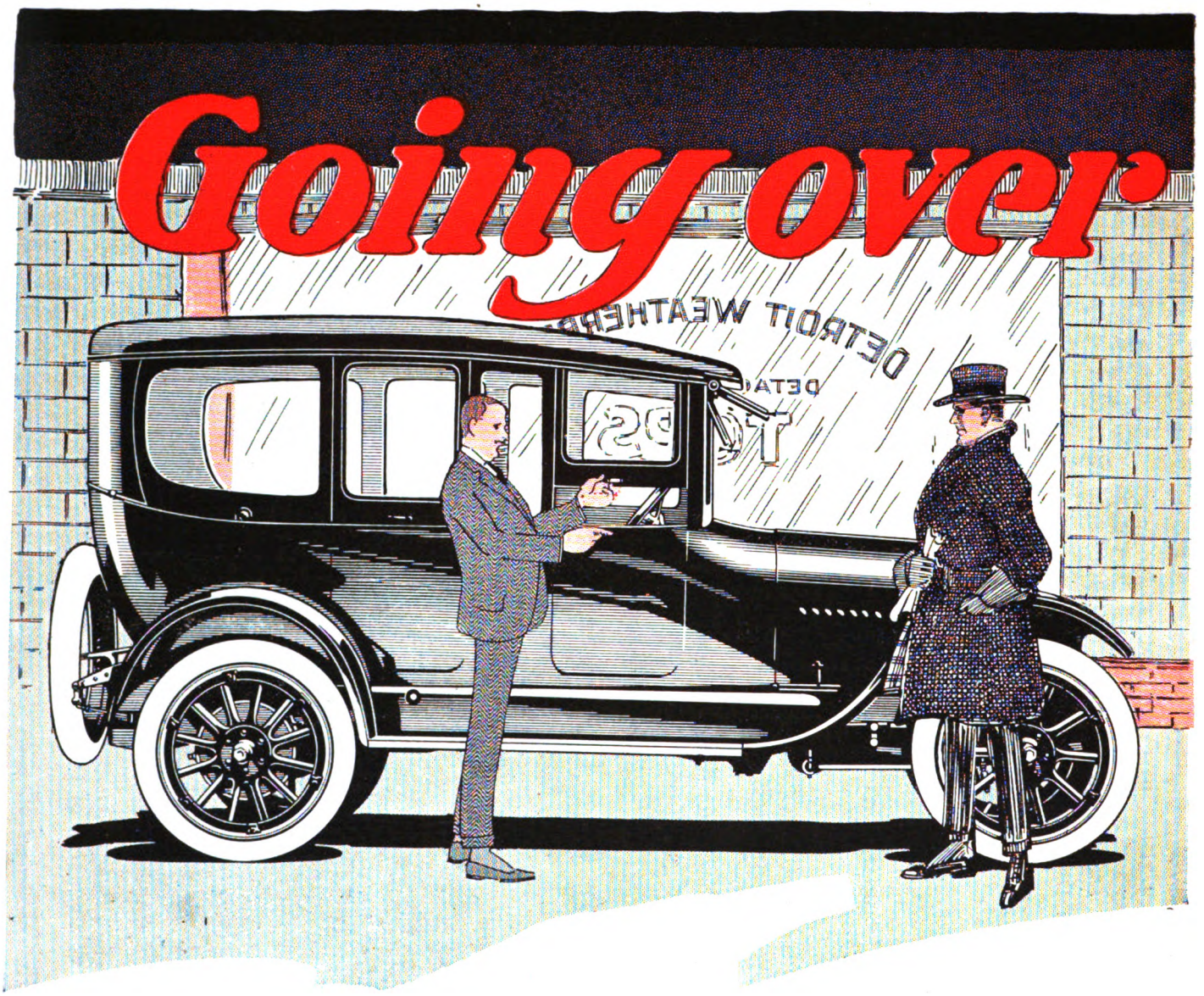
Elgin Motor Car Corporation, Chicago, U. S. A.



New Elgin factory buildings now being rushed to completion which, when finished, will have a capacity of 100 cars per day.

When writing advertisers please mention Motor World—It identifies you

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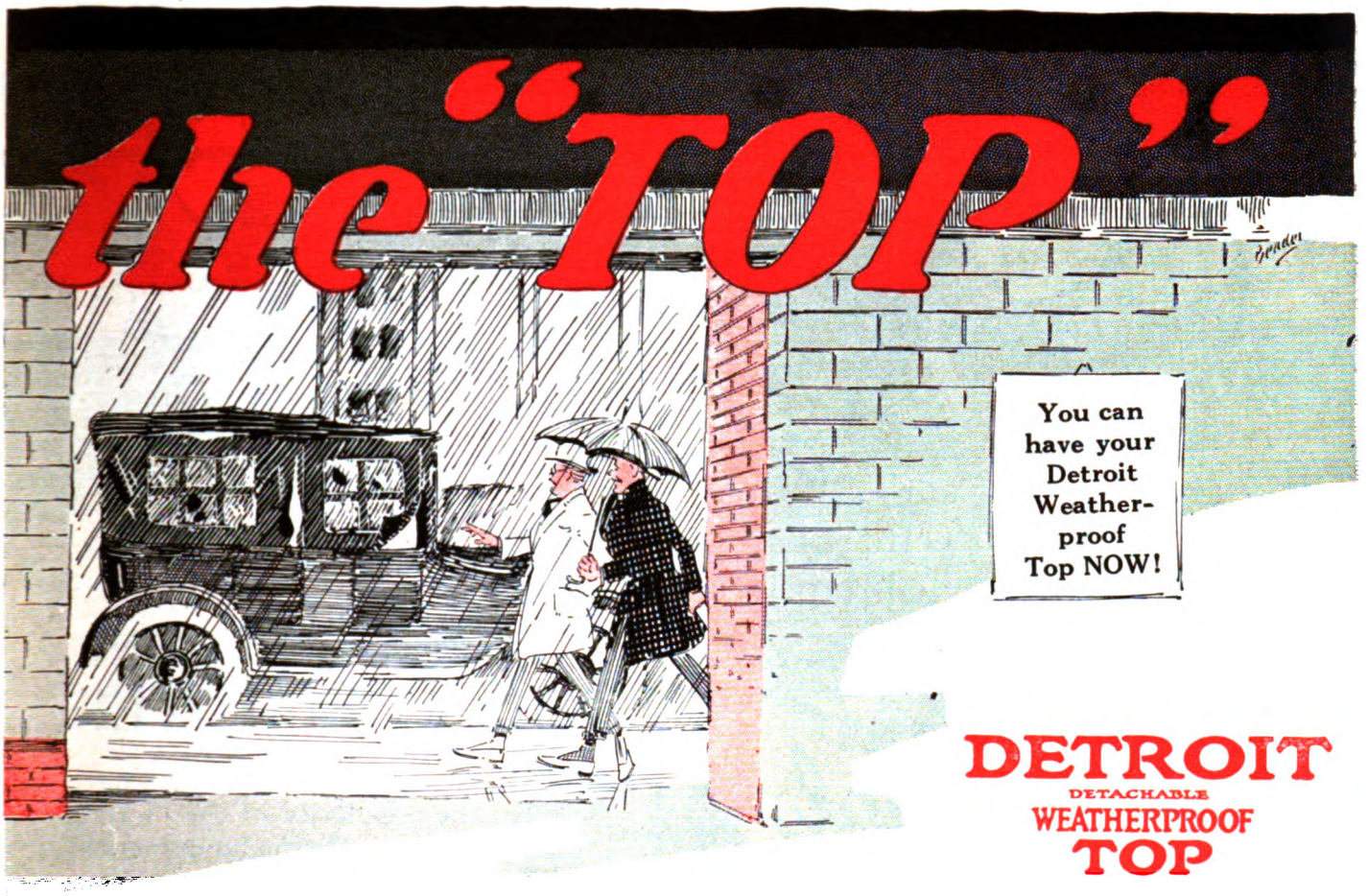
"GOING OVER THE TOP" is a war time expression. We've adapted it to our top—the Detroit Convertible Weatherproof Top. There's no danger and plenty of enjoyment in going over our top. We go over it often now—in the past months we have been over it many times. We know its every part—that its framework is designed by trained engineers—fashioned by expert woodworkers—made as strong, durable, shapely as it's possible to make a top.

Its clean-grained hardwood frame is reinforced by light, tough sheet steel. Huge presses have stamped its metal sash. Then—every part is weatherproofed. Every joint made snug and tight. Rear and side glass panes set firmly and rattle proof. And then the flexible sliding extra wide doors that contain no glass but a material clear as glass made to slide up, to slip out of sight into the top itself.

DETROIT
DETACHABLE
WEATHERPROOF
TOP

Detroit Weatherproof Body Company
102 Saginaw Street
Pontiac :: :: Michigan

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Over the whole framework is securely and permanently shaped the patented weatherproof covering. The same material protects the sides. The interior is lined with rich limousine cloth. It's the distinctive Detroit Convertible Weatherproof Top—*The Top at the Top.*

A Rich Line for Dealers

Dealers sell Detroit Weatherproof Tops to far-seeing customers or to customers who blow in with the November storms.

There's a market for Detroit Weather-proof Tops in your territory from which some dealer will make money. That dealer may as well be you. Cut the coupon, send it today for sales plan and full information.

Detroit Weatherproof Body Co.
102 Saganaw Street
Pontiac Michigan

Retail Price List

For the present we manufacture tops for the following cars only:

Ford Touring	$87.50
Overland Model 83-5 Pass.	115.00
Buick D45 Light 6	140.00
Chalmers 6-30-5 Pass. (including rain vision visor to be fitted to standard windshield)	185.00
Chandler 1917, 1918 (including 3 piece built-in windshield)	185.00
Hudson Super Six Touring (including 3 piece built-in windshield)	190.00
Chevrolet Model Four-ninety	110.00
Maxwell Touring $145; Roadster	130.00

COUPON

Detroit Weatherproof Body Co.
102 Saginaw Street
Pontiac, Mich.

Gentlemen: Kindly forward full details relative to *"the Top at the Top"* for a.....car.

Name .....

Address .....

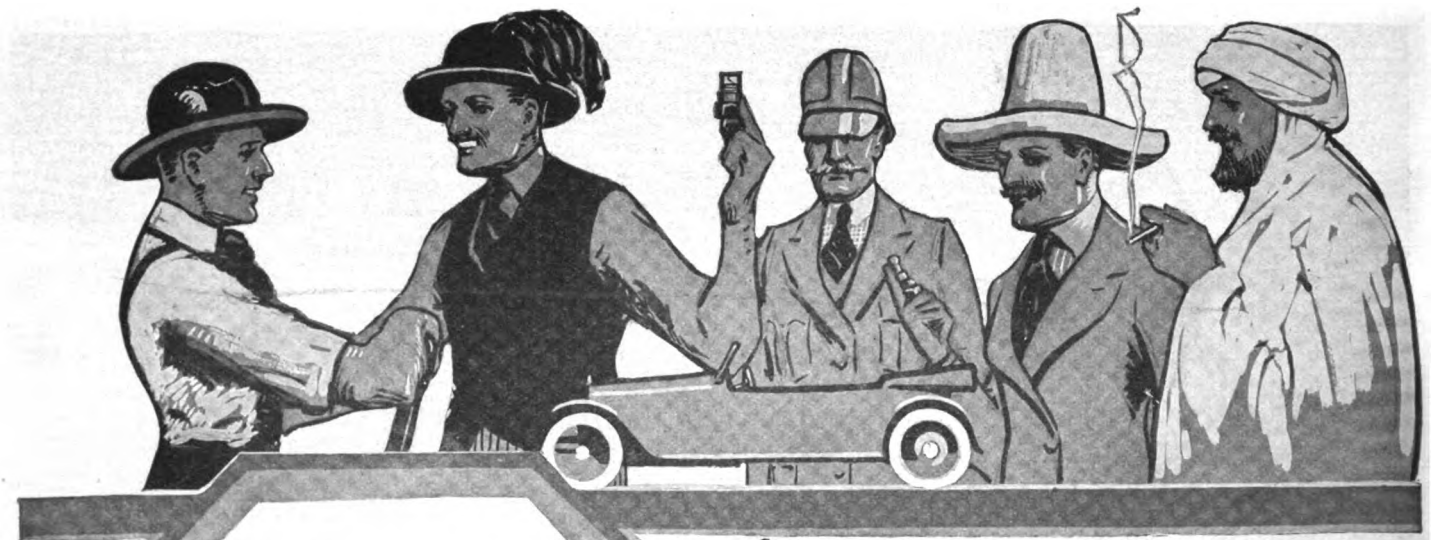
FOR DEALERS

Kindly forward dealers' terms, discounts, etc. I'm in the ..... business.

Name .....

Address .....

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BERGIE
National
SPARK PLUGS



The Spark Plug
With the One Inch
Firing Surface

IN GENERAL USE THE WORLD OVER

BERGIE National Spark Plugs have carried the popularity of the "1-Inch Firing Surface" into the far corners of the earth.

Wherever motor cars travel, this famous spark-plug is known. The man who knows most about spark-plugs uses it—recommends it.

For cold weather motoring—easy starting—no spark plug surpasses the BERGIE National.

Try a set this winter on 30-Days' Trial. Price $1.00 each, for all car makes and models. Order of your dealer, or direct if he cannot supply you.

We have an unusually interesting dealers' proposition. Write for it.

BERGIE NATIONAL SPARK PLUG CO.
ROCKFORD ILL.

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MICHELIN TIRES mean an end to Worry

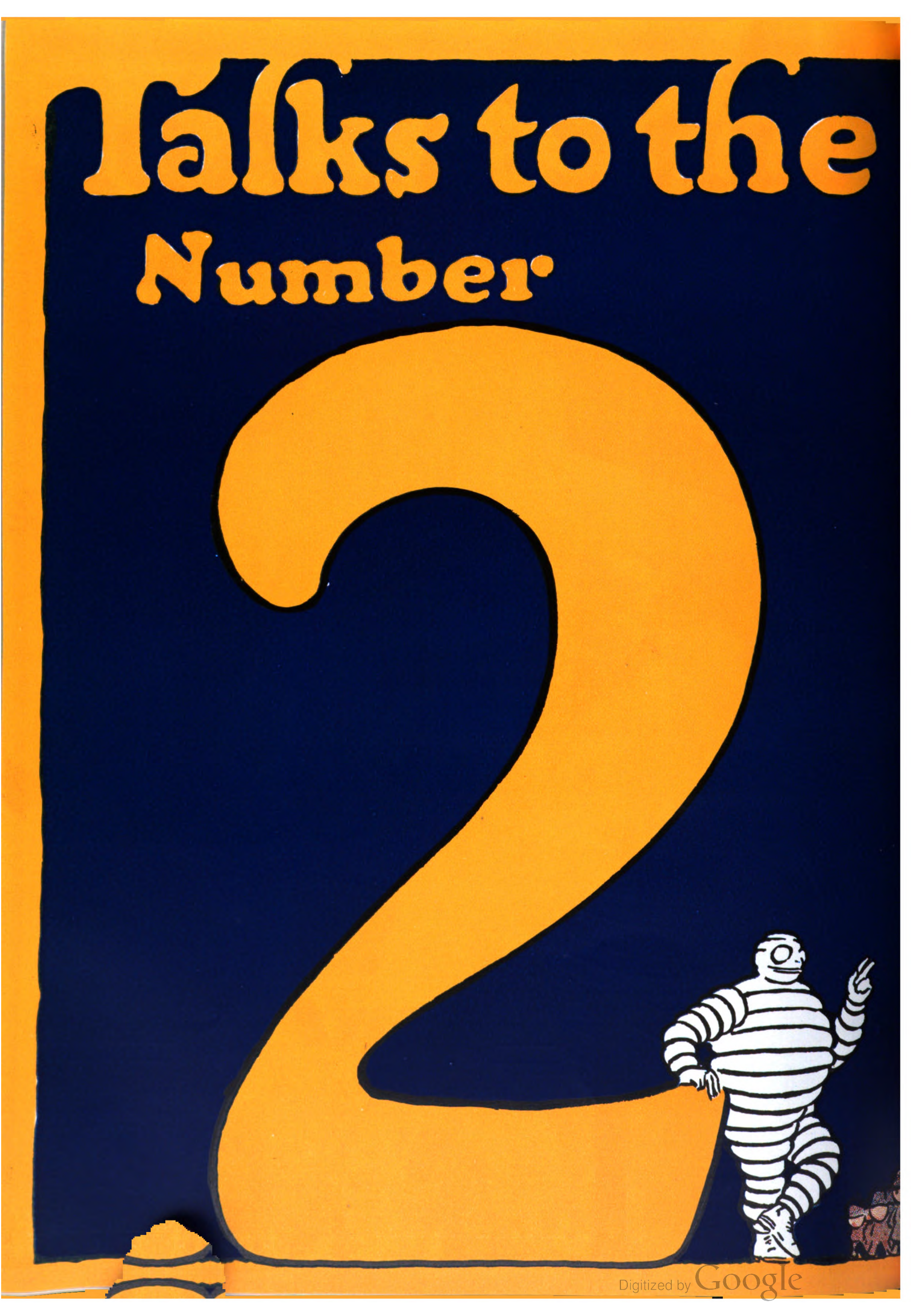


M

Dealers who sell Michelins have no occasion for worry. Why should they worry?

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Talks to the Number



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TIRE TRADE

YOUR SUCCESS, Mr. Dealer, depends primarily on two things:

1st. Your ability to get customers.

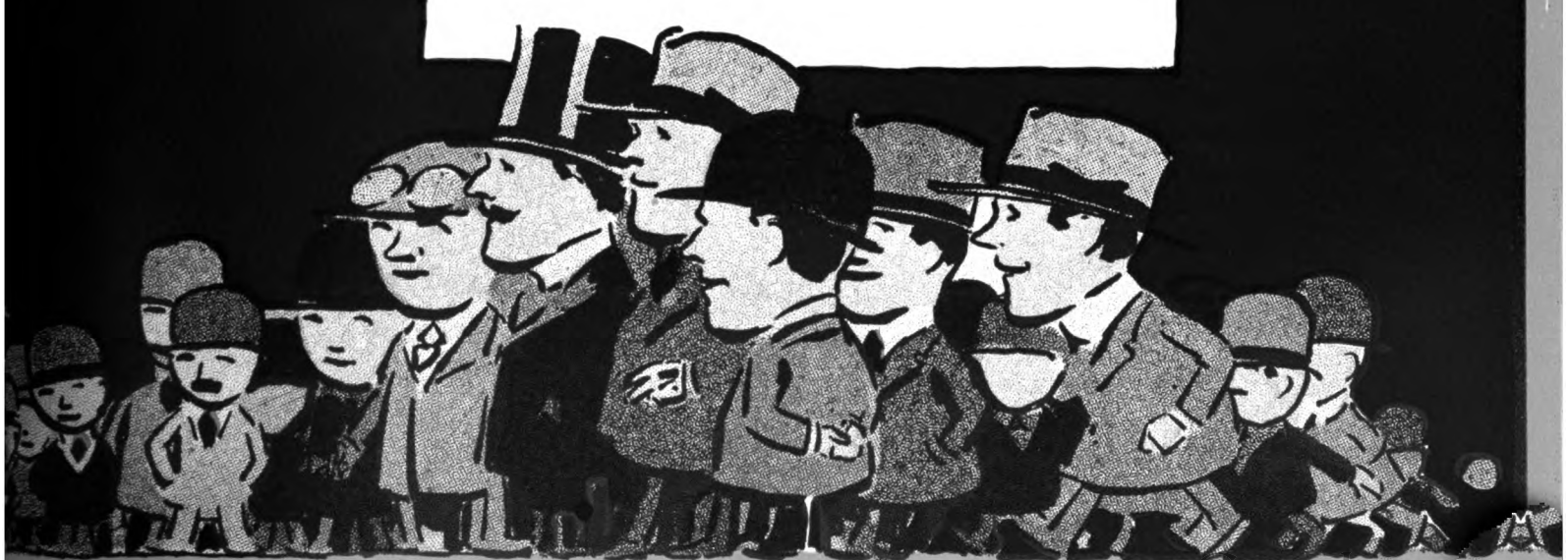
2d. Your ability to *hold* them.

Michelin enables you to get new customers easily through Michelin's high quality, moderate price and extensive advertising.

And Michelin holds your customers for you through the unrivaled satisfaction which Michelin Tires give, leaving you free to develop your business along all lines.

Write us and we shall gladly send you details of the 1918 Michelin proposition.

Michelin Tire Company
Milltown, N. J.



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Some Facts that Account for Michelin's Unequaled Durability

1. Michelin invented the pneumatic automobile tire. Longer experience is reflected in a better product.
2. More quality rubber and fabric go into Michelins than into other tires. Michelins weigh 12 to 15 per cent. more than other makes. When you remember that the extra weight of Michelins and the extra thickness of tread are all in materials of the *highest possible* quality, the above facts are conclusive.
3. The unique and time-tested Michelin tread, while a perfect non-skid, is also an ideal "driving" tire that steers as easily and smoothly as a plain tread. The reason for this is—
4. Instead of having small projections that wear off quickly, the Michelin tread is broad and flat—always presenting a large wear-resisting surface to the road.

There is no better tire than the Michelin Universal at any price. Yet few quality tires cost so little.

Write us today for details of the Michelin dealer plan, which is just as far ahead as the Michelin Universal Tread itself.

Michelin Tire Company
Milltown, N. J.

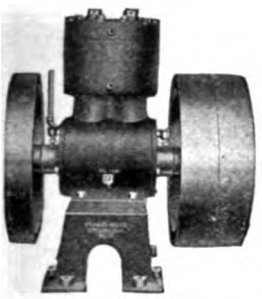


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They never fail to recognize
The Brunner Sign which Signifies-
A Service True-which Satisfies-
The Motorists who are Brunner-wise

YES, BRUNNER SERVICE SATISFIES



As the winter months draw near, Mr. Garageman, you should look around you and make sure that every detail of your service is as proficient as it should be—for instance, your compressed air service—is that what it should be? Is it a truly satisfactory service such as Brunner Service?—the one compressed air service that always satisfies.

DON'T WAIT TILL SPRING TO IMPROVE YOUR SERVICE—NOW IS THE TIME TO INSTALL BRUNNER EQUIPMENT

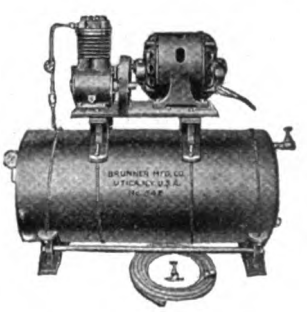
because it would help you over the hard Winter months and make you ready for the Spring as well—your regular patrons would appreciate Brunner Service and it would bring to your door this Winter the trade of the Brunnerwise Motorist which would help some.

INVESTIGATE THE BRUNNER AIR COMPRESSOR

There are seven standard sizes and any possible number of motor and belt driven combinations to suit the garageman's requirements—there are no extravagant promises of impossible performances—but simply the same good substantial business proposition it has always been for the garageman.

There are more Brunner Air Compressors in use in the garages than there are air compressors of any other make—the reason is obvious.

The BRUNNER Air Compressor is the Pioneer of All Garage Air Compressors, Because—



The Brunner has been demonstrating its sterling value in the garage ever since we have had garages—it is and always has been a real garage air compressor, designed and developed in a plant which was planned and built for the exclusive purpose of manufacturing Garage Air Compressors—backed by an organization whose entire time and attention has always been devoted to the building of Garage Air Compressors exclusively.

Write for our No. 14 Catalogue and Handbook on Compressed Air and get the facts.

Let us send you the name of the Brunner Jobber covering your town—he will be glad to recommend and guarantee a Brunner Outfit that will do your work right.

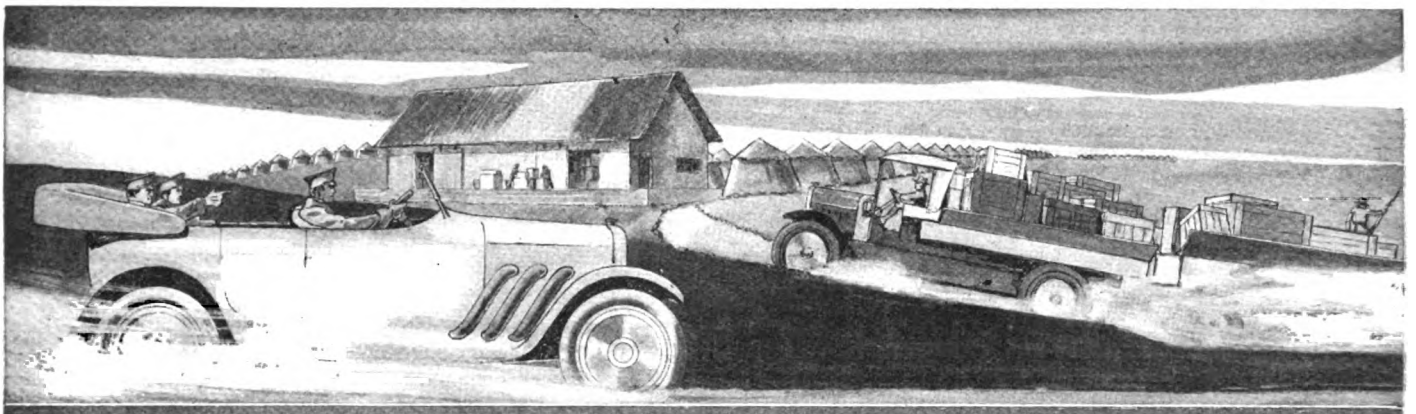


Brunner Manufacturing Company

Main Office and Plant
UTICA, N. Y.

Cincinnati Branch
Cincinnati, Ohio

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Specialties:

SLO-FLO

The super-lubricant; cohesive; will not drip, climb or spatter; withstands excessive heat and pressure.

CUPESE

The Swan & Finch "hall-mark" name of a complete line of quality cup greases. Produced by the original manufacturers of mineral oil greases, by the special Acaloric Process.

ASBESTESE

An asbestos and wool-mixed grease lubricant for car journals.

CORUL

A liquid binder that meets the 11 requirements of perfect core casting.

AERUL

A practical, quality oil for aeroplane motors. The correct viscosity combined with proper cold test values gives perfect seal and maximum horse power with maximum safety.

MOTUL

A superior quality motor oil, for the protection of valuable automobiles.

GEARESE

A correct transmission and differential lubricant for motor cars and trucks.

TEXTUL

An economical, high quality oil compound for wool and worsted manufacture.

MARINUL

A world-known special oil, produced to meet the excessive stresses of marine service.

TALESE

An economical, practical drop forge die swabbing grease.

ALSO—

Atlas Engine Oils
Atlas Cylinder Oils
Atlas Turbine Oils
Atlas Dynamo and Motor Oils
Atlas Crank Case Oils
Atlas Transformer Oils
Atlas Cutting Oils
Atlas Tempering and Quenching Oils
Atlas Spindle and Loom Oils
Atlas Wool Oils
Atlas Leather Oils and Greases
Atlas Fish Oils

Operating Under Maximum Efficiency

The men of the United States are working at topmost efficiency. Scientific study is developing greater efficiency and more economical methods of operation of both men and machinery.

Motor cars and trucks are valuable pieces of machinery these days—carelessness in specifying correct lubricants for protecting them is, or should be, a thing of the past.

How about your motor car and truck?

A silent, smooth-running car—a matter of personal pleasure in an automobile—of personal profit in a motor truck—bears witness to the value of scientific lubrication.

Scientific lubricants for scientific lubrication

GEARESE

Gearese is the scientific lubricant for transmissions. It is used by many of the leading motor car manufacturers, racers and owners all over the country because it solves the problem of correct lubrication for gears and differentials.

Gearese prevents grinding when shifting gears—does away with noises in all speeds. It will make yours a silent, smooth-running car—providing the gears are not too far gone.

Gearese is cohesive and adhesive—follows the gears continuously—leaves no spots where metal can rub against metal.

Have gearcase and differential on *your* car and trucks repacked with Gearese.

MOTUL

In Motul has been produced the correct motor oil for every motor car,—varying densities to suit each individual need. Motul has made it possible to minimize the amount of carbon residue and to get full fuel power—maximum seal. Information regarding the correct density of Motul for your particular make of car or truck will be gladly sent on request.

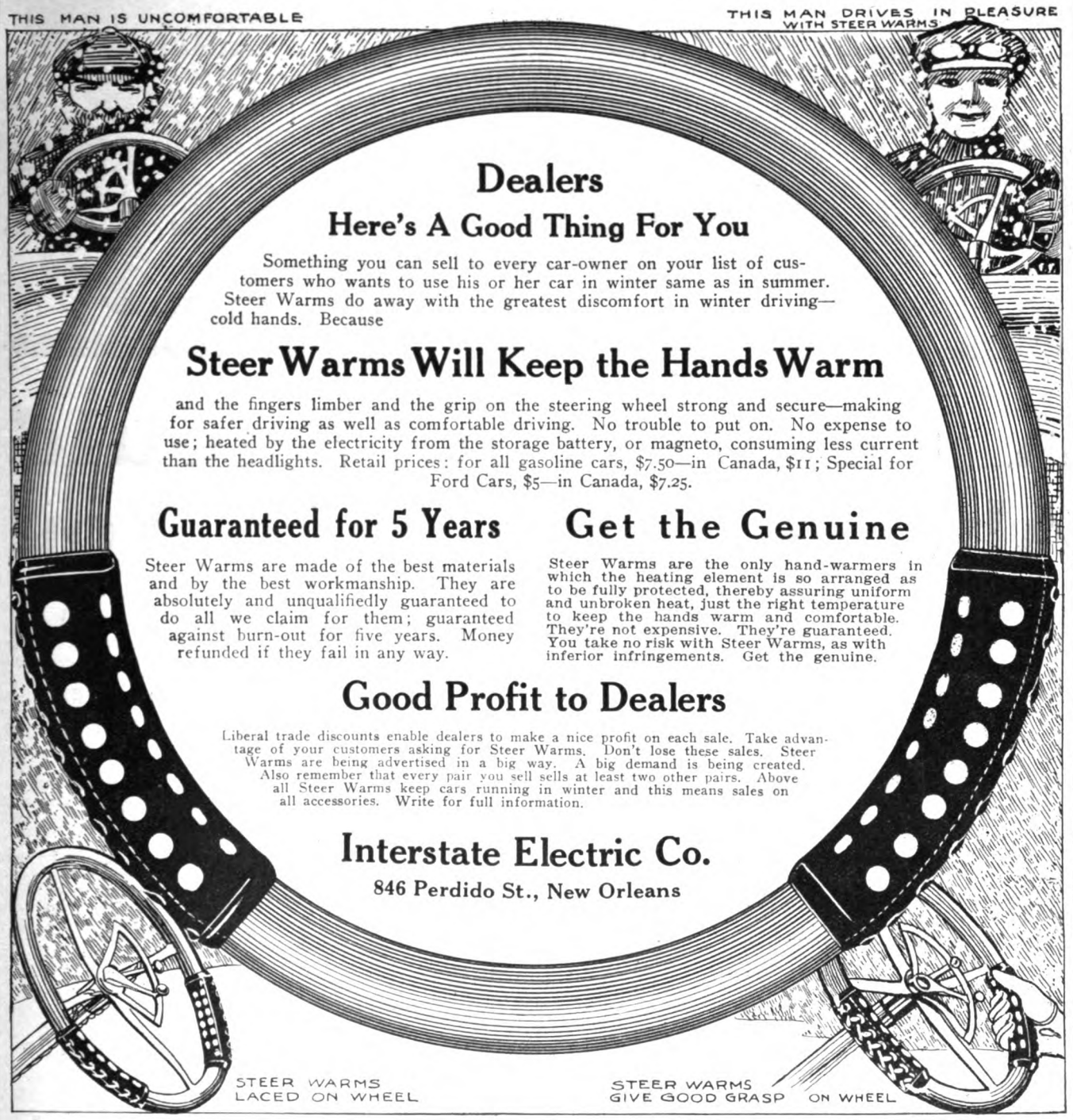
SWAN AND FINCH COMPANY
NEW YORK

Quality Oil and Grease Products Since 1853

To select accessory dealers and garages an opportunity is open to make a permanent, profitable distributing connection with the Swan & Finch Company for heavily advertised quality automobile lubricants. Full particulars on request.

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Steer Warms For Winter Driving



Dealers

Here's A Good Thing For You

Something you can sell to every car-owner on your list of customers who wants to use his or her car in winter same as in summer. Steer Warms do away with the greatest discomfort in winter driving—cold hands. Because

Steer Warms Will Keep the Hands Warm

and the fingers limber and the grip on the steering wheel strong and secure—making for safer driving as well as comfortable driving. No trouble to put on. No expense to use; heated by the electricity from the storage battery, or magneto, consuming less current than the headlights. Retail prices: for all gasoline cars, $7.50—in Canada, $11; Special for Ford Cars, $5—in Canada, $7.25.

Guaranteed for 5 Years

Steer Warms are made of the best materials and by the best workmanship. They are absolutely and unqualifiedly guaranteed to do all we claim for them; guaranteed against burn-out for five years. Money refunded if they fail in any way.

Get the Genuine

Steer Warms are the only hand-warmers in which the heating element is so arranged as to be fully protected, thereby assuring uniform and unbroken heat, just the right temperature to keep the hands warm and comfortable. They're not expensive. They're guaranteed. You take no risk with Steer Warms, as with inferior infringements. Get the genuine.

Good Profit to Dealers

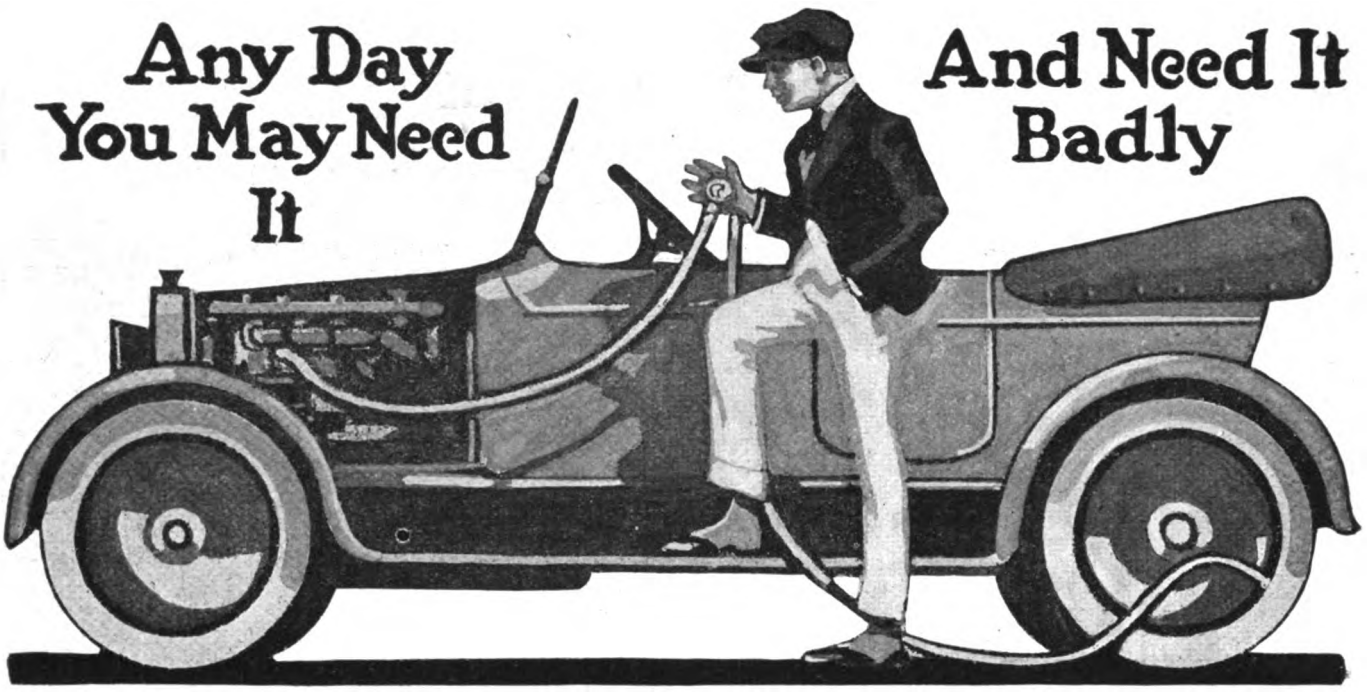
Liberal trade discounts enable dealers to make a nice profit on each sale. Take advantage of your customers asking for Steer Warms. Don't lose these sales. Steer Warms are being advertised in a big way. A big demand is being created. Also remember that every pair you sell sells at least two other pairs. Above all Steer Warms keep cars running in winter and this means sales on all accessories. Write for full information.

Interstate Electric Co.

846 Perdido St., New Orleans

Cold Weather Made Profitable

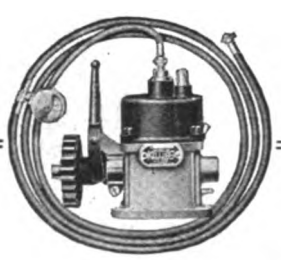
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A Pump You Should Always Have With You

because it keeps tires up to proper pressure at all times—anywhere.

For safety's sake; for convenience and service; for tire economy—you will always find the Kellogg superior.



Is Your Car Here?

Buick
Chalmers
Chandler
Chevrolet
Dodge
Ford
Hudson
Hupmobile
Kissell
Nash
Oldsmobile
Overland
Paige
Reo
Studebaker

Dealers equip these cars and many others

KELLOGG Engine Driven Tire Pump

"No Oil Spray"—Guaranteed
"All Metal Construction"—Everlasting

If your car is not already Kellogg equipped you will find a place on your car designed for it.

Send name and model of your car and dealer's name

KELLOGG MFG. CO.
ROCHESTER, N. Y.

Branches and Distributors in All Principal Cities

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"Commerce TRUCKS FOR BUSINESS"



The Product of Seven Successful Years

In seven years of successful production we have built and sold thousands of Commerce Trucks. It is our conviction that a single model and concentration upon that single model make for a better product.

Therefore, upon one truck chassis we concentrate our entire seven years' experience, our entire engineering organization, mechanical equipment and large factory production.

The One-Ton Commerce Trucks

Seven years' experience has convinced us that the one-ton truck offers the widest and most diversified utility.

Seven years' experience has convinced us that only by such concentration can we design and build a one-ton truck possessing—

First—the stamina, durability and month-in-month-out serviceability of the One-Ton Commerce Truck.

Second—the completeness of equipment which means that the One-Ton Commerce is ready to meet any and every conceivable demand upon a one-ton truck when it leaves the Commerce factory.

Third—the good looks and distinctive appearance of the One-Ton Commerce Truck—so desirable to the merchant who prizes the good opinion of discriminating customers.

Fourth—the standard-excellence of every detail and feature of equipment that go into the One-Ton Commerce.

It is our determination—and we believe we are achieving it—to make the One-Ton Commerce the most thoroughly equipped one-ton truck manufactured in the United States today.

An examination of the specifications and standard equipment charted below will convince you of the accuracy of this claim.

Commerce Dealers—everywhere—are substantial, progressive business men. They all have a thriving business twelve months in the year. And we are only just beginning to herald in national advertising, the nation-wide popularity of Commerce Trucks.

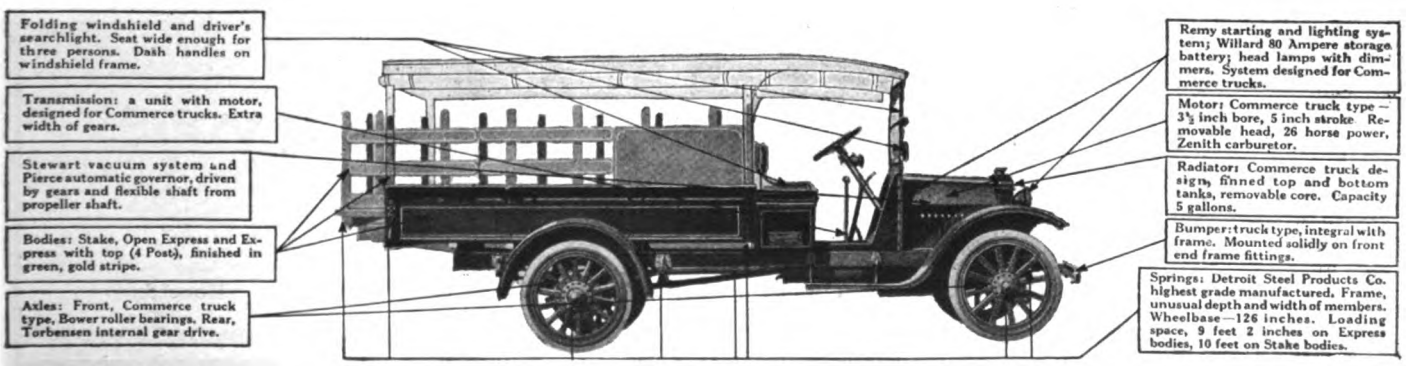
One-ton Chassis - - - $1340
With Express Body - - - $1375
With Post Top and Storm Curtains $1450
With Standard Stake Body - $1490

Prices, f. o. b. Detroit

Applications will be considered for District Managers of ability and experience to represent this company in organizing truck dealers for open territory.

Commerce Motor Car Company 30 Mackie Ave., Detroit, Michigan

NOTE TO DEALERS — Watch the pages of the Saturday Evening Post and other National Magazines for Commerce advertisements. This is only one of a long series.



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"I put My Car up for the Winter!"

"THE Old, Old Story, Oft Repeated—unsatisfactory lubrication—oil will not flow at zero—scored cylinders."

"It's different now—I have found an oil which 'Flows Freely at Zero'—gives perfect lubrication and leaves less carbon."

"I'll run her all year 'round on

SUPREME AUTO OIL

Sold everywhere you see the sign of the Orange Disc"

MANUFACTURED BY

GULF REFINING COMPANY

The Largest Independent Refining Company in the World

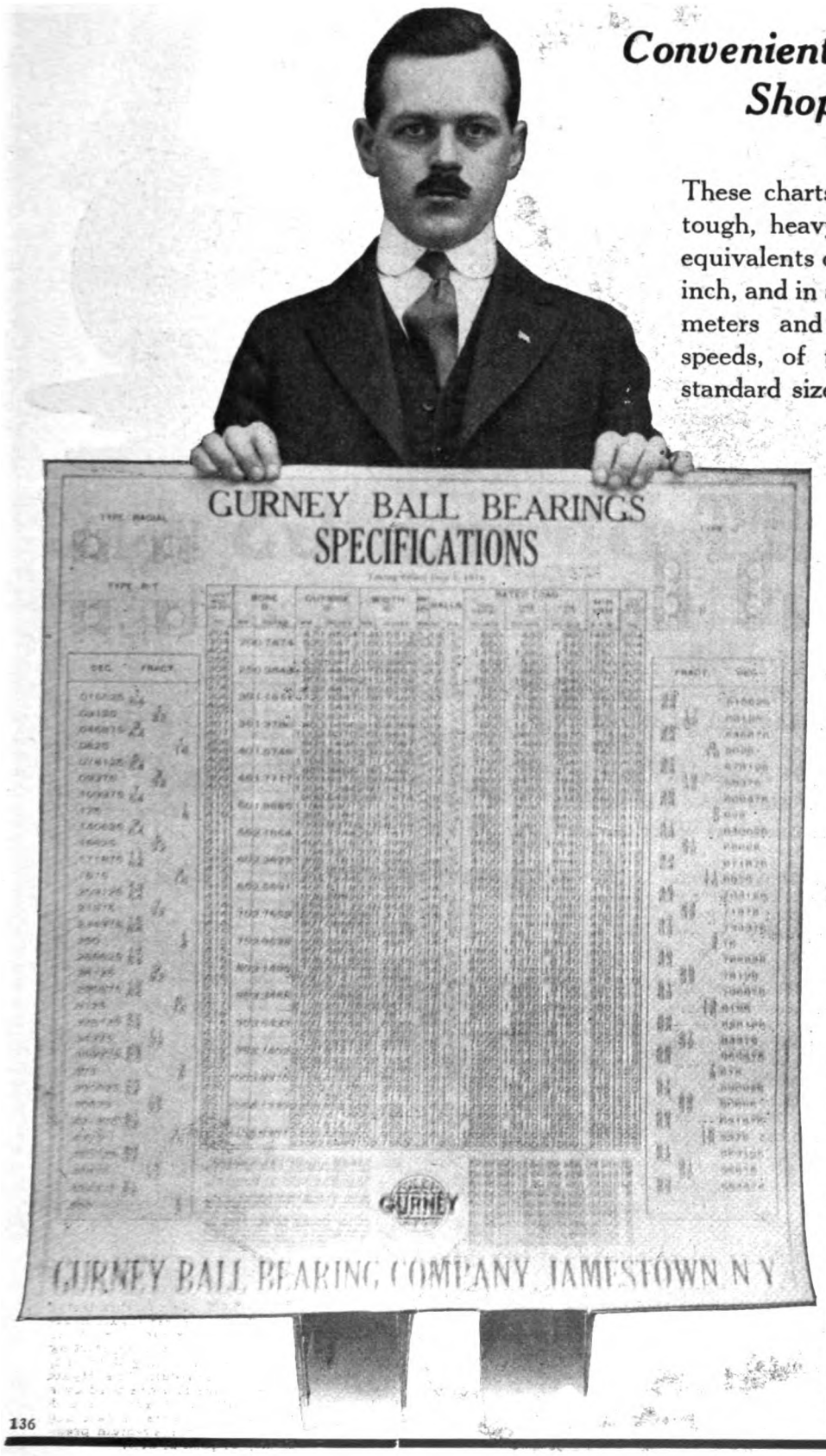
GENERAL SALES OFFICES: PITTSBURGH, PENN.

DISTRICT SALES OFFICES:

New York Philadelphia Boston Atlanta Tampa New Orleans Houston

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Ask us for one of these Wall-Charts



Convenient for Drafting Room, Shop and Garage

These charts are 28 x 32 inches, printed on tough, heavy paper. They give the decimal equivalents of fractions from 1/64 inch to one inch, and in addition give dimensions (in millimeters and inches), and rated loads and speeds, of the seven types and fifty-seven standard sizes of Gurney Ball Bearings.

Even tho you do not use ball bearings at present, you will find the table of decimal equivalents very useful, and whenever you have occasion to consider the use of ball bearings complete data will be available.

If you are already using ball bearings, you will find it interesting to compare the large load ratings of Gurney Ball Bearings with the ratings of other ball bearings.

Fill out and mail the coupon and the chart will be sent free of charge and postpaid. If you can use more than one chart to good advantage, we will send as many as you need.

Gurney Ball Bearing Company,
Conrad Patent Licensee,
Jamestown, N. Y.

Gentlemen:

Please send me the chart of decimal equivalents and ball bearing specifications, as advertised in Motor World.

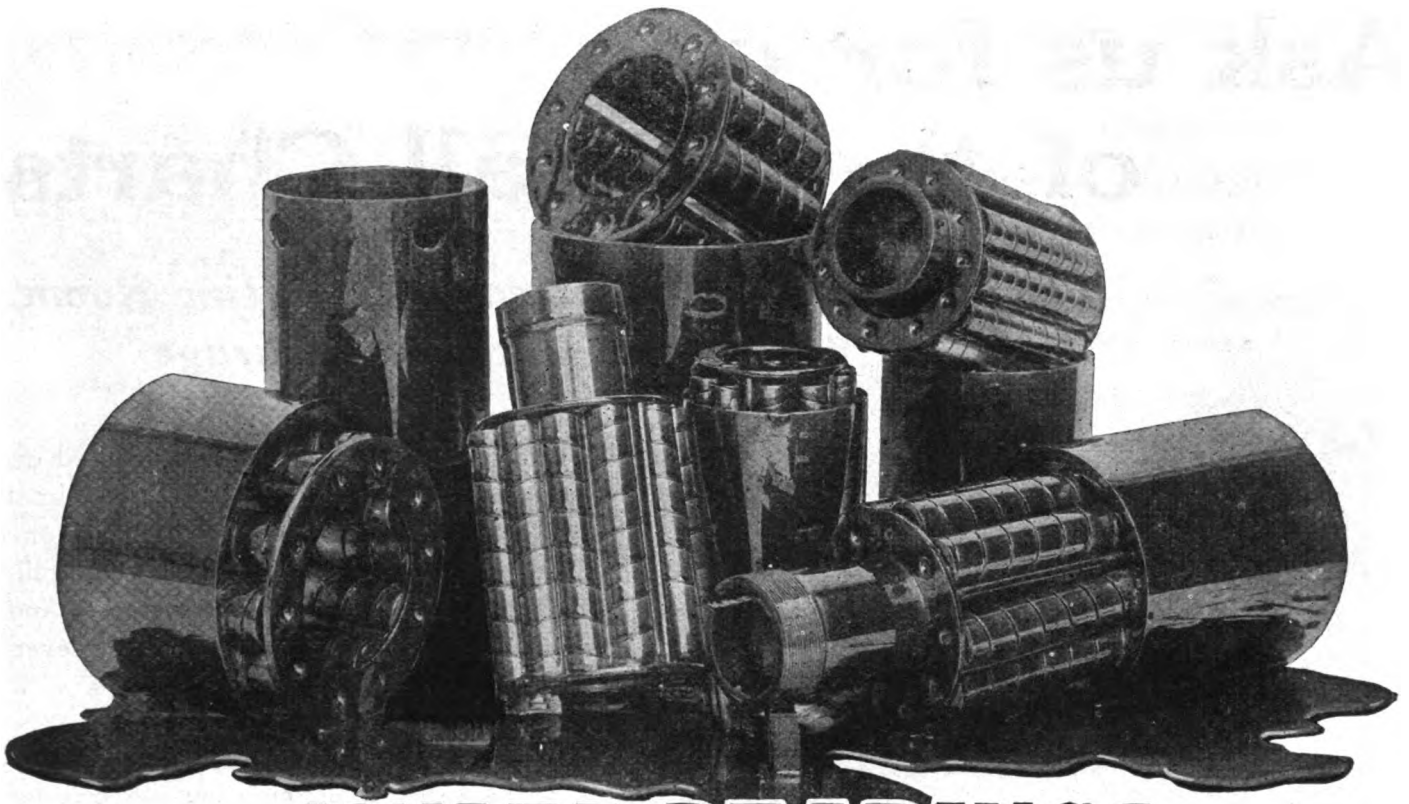
It is understood this does not obligate me in any way.

Name .....

Address .....

136

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These HYATT BEARINGS Hold the World's Endurance Record

HERE THEY ARE—the original "Hyatt Roller" bearings, dripping with grease—just as they were taken from the "Hyatt Roller" at the end of its long grinding circuit of the country.

272,962 miles is now the official record of this car—a greater proved distance than any other car has ever gone.

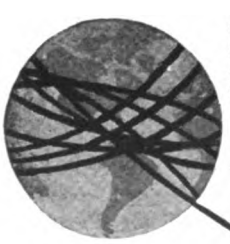
When this photograph was taken, it was the first time these bearings had seen the light since the world's long-distance veteran started its journey "Around the U. S. A."

Yet this original set of Hyatt bearings is still serviceable. Laboratory examination shows an average wear of only four one-thousandths of an inch (.004") —a wear perceptible only to micrometer and microscope—not enough to interfere with the good service they have given and will continue to give when returned to their positions in the car.

In view of their past—nine years strenuous service covering 261,800 miles—their latest 11,163 mile performance is all the more remarkable.

They have surmounted all the toughest conditions of touring—gumbo roads, mountain grades, desert sands—and have finished on schedule time.

This test gives you a definite indication of the enduring, quiet, care-free service you can expect from your Hyatt Roller Bearings.







In 1915, this car, a 1909 Buick, later rechristened the "Hyatt Roller," won the Hyatt mileage contest with an officially proved record of 261,800 miles—a distance equal to ten times around the world, all on its original set of Hyatt Roller Bearings. The car, used for trucking and livery, underwent unusually severe service.

In 1917, as a further test of these Hyatt Bearings, this same car covered the route shown on the map, starting June 4th and finishing October 5, exactly on schedule. The "Hyatt Roller" since 1909 has used over 19,000 gallons of gasoline and $8000 worth of tires to date but its Hyatt Bearings remain practically as good as new.

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What Do *Your* Customers Do About It?

Are your customers among the rapidly increasing number of car owners who *personally* see to it that their batteries are given proper care?

Or do some of them belong to the other class?—those who say, "I guess it's all right; it's never given me any trouble."

Some day every battery will wear out—but *when* it wears out depends to a very large extent on how it has been treated.

It doesn't take much time, or trouble, to assure a Willard Battery of long life. It just means being *sure* of a few things.

Let Me Make it Easy for You

It's my business—to help you.

Tell your customers to stop at the Willard Service Station a few minutes twice a month and I'll give their batteries the once-over, and make sure everything's O. K.

It costs you nothing, helps keep car owners satisfied.

Besides, winter is coming nearer, and you want them to have a pointer or two on how to keep the battery right up to top-notch efficiency for cold weather starting.

And, by the way, if you aren't already posted, ask about the "Still Better Willard, with Threaded Rubber Insulation." It's the highest-quality battery ever built. It costs a little more, but it's worth it, in increased dependability.

Willard Service.

Willard STORAGE BATTERY

Threaded Rubber Insulation

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REO

Tired of Chasing Rainbows?

ARE YOU "FED UP" with grabbing after the new ones — the Fly-by-Nights—spending your time and your good money trying to introduce a new line—and then have the "factory" fall down on you?

SOME RECENT INSTANCES should serve as a lesson to automobile dealers for a long time to come.

LOOKED INVITING—didn't they? Your own terms and a contract that —if you read it backward—spelled Utopia.

BUT DIDN'T PAN OUT—such things never will

THE DAY HAS PASSED when the Get Rich Quick Wallingfords reveled in the automobile business—either as distributors or manufacturers.

IT PAYS TO HANDLE a line that you know and can depend upon. One whose past is a guarantee for the future;and a line that is a complete line.

IF YOU CAN GET the Reo line in your territory you never need to handle an automobile or motor truck of any other make.

FOR THE REO LINE is complete—and consistent. No one model competes with another. Each supplements the other Reo models—logically.

IN A FEW PLACES we've had to make changes in our representation. May feel justified in doing so in a few more.

SO IF YOU HAVE concluded that for the future you'll put your time, your money and your reputation, back of a good line, write the Reo sales department.

YOU MAY NOT GET it—but your letter will be treated in strict confidence. Then again—you may be the lucky one. The dealer who secures the Reo line is—made.

Reo Motor Car Company

Lansing, Michigan

THE GOLD STANDARD OF VALUES

When writing advertisers please mention Motor World—It identifies you

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What Are You Going to Do this Winter?

WHEN John Frost sinks his iron heel into the touring season and the garage business takes its annual slump, what are you going to do to even things up? You know the labor situation—you ought to hold on to all your working force. How can they earn their wages and make money for you?

This is the answer: Put them to selling Dyneto Light-and-Power Plants. There is a big demand for these efficient electric lighting and power plants among your customers. Not only on farms but in towns where no electric light is available, Dyneto Plants have a ready sale.

Hundreds of garagemen have adopted this plan of extending their profits and are reaping good money. There is more profit in selling a Dyneto Light-and-Power Plant than in a low-priced automobile, and the sale is much easier.

You will make many sales right in your garage. Put in a Dyneto Plant to furnish your electric lights, run your air-pump and charge batteries. At the same time, you can use it as a demonstrator to customers who come to the garage. But do not be content with that. Mount another plant on the back of an auto or on a trailer and send your men out after business.

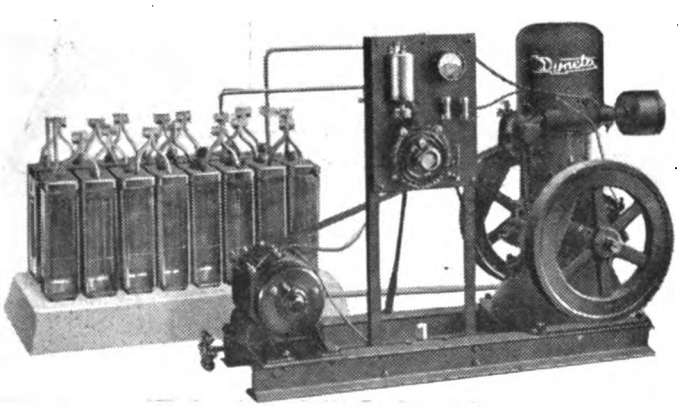
Dyneto Light-and-Power Plants consist of a gasoline engine (gas or kerosene, if preferred), generator, switchboard and standard 16-cell storage-battery outfit. The engine is self-starting from the battery. Belted to a line-shaft, the engine furnishes power for pumping water, running separator, milking machine, churn and for other power duty, charging the batteries for light at the same time.

The Dyneto Plant is simple, fool-proof, easy to install and care for. It may be had without engine if your customer already has an engine.

Make this the most profitable Winter you ever had. Plan to go after this business good and hard. Write to us today about the necessary steps.

DYNETO ELECTRIC CORPORATION

272 Wolf Street, Syracuse, N. Y.



DYNETO ELECTRIC CORPORATION
272 Wolf Street
Syracuse, N. Y.

Please outline your proposition on selling Dyneto Light-and-Power Plants in this community.

Name_____

Address_____

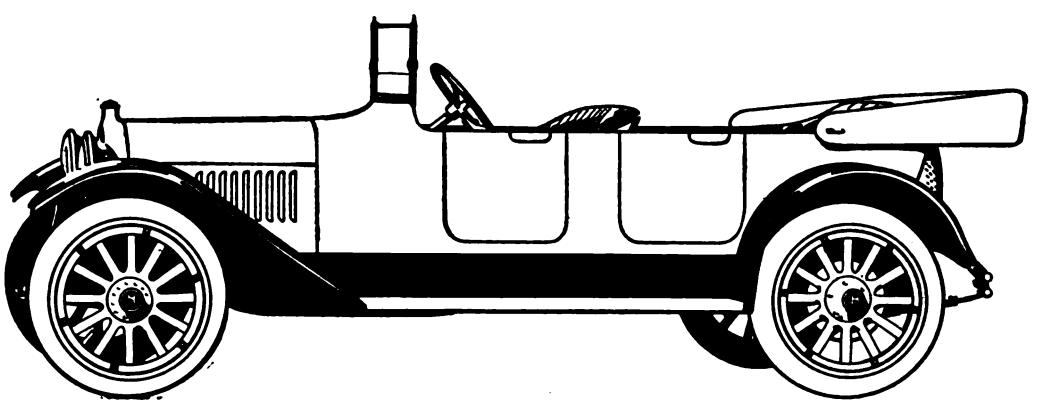
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Hupmobile

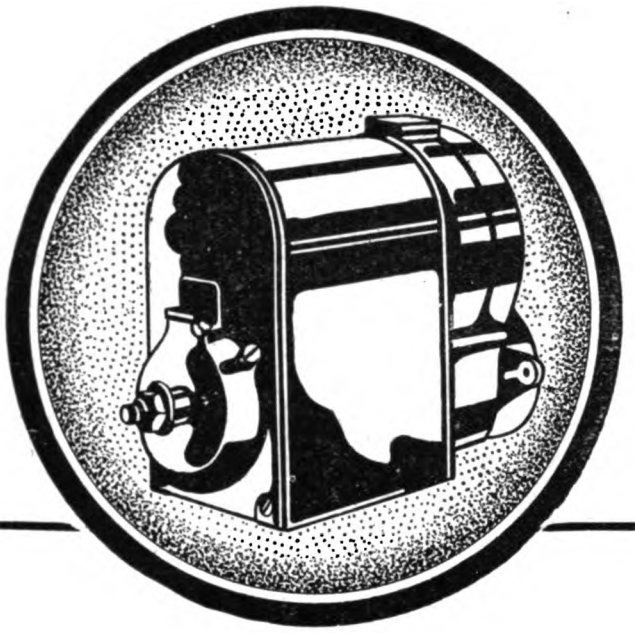
You have heard how the Hupmobile, in performance, outpoints other fours, and sixes, eights and twelves. On the country's noted test hills—in sand and mud—in every kind of bad going—its pulling power has proved supreme.

That is one reason why the Hupmobile has won preference over multi-cylinders. Another is its simplicity. Still another is its greater economy.

HUPP MOTOR CAR CORPORATION
DETROIT, MICH.



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When Mr. Edison Speaks—

When he discusses electrical innovations, we listen to him with respect.

When Signor Marconi speaks of wireless, every word has weight.

When Mr. Schwab discusses the steel situation, he is sure of an interested audience.

Whenever recognized authority expresses itself, we can rely upon its opinions and judgment.

So, when the motor manufacturers who are known to maintain the highest structural standards adopt Eisemann Magnetos as standard equipment, isn't it conclusive evidence of superiority?

In the truck field, where the hardest tests come, 81 manufacturers have done so. Most of the recognized leaders are included in that number.

THE EISEMANN MAGNETO CO.

Sales and General Offices: 32-33d St., Brooklyn, N. Y.

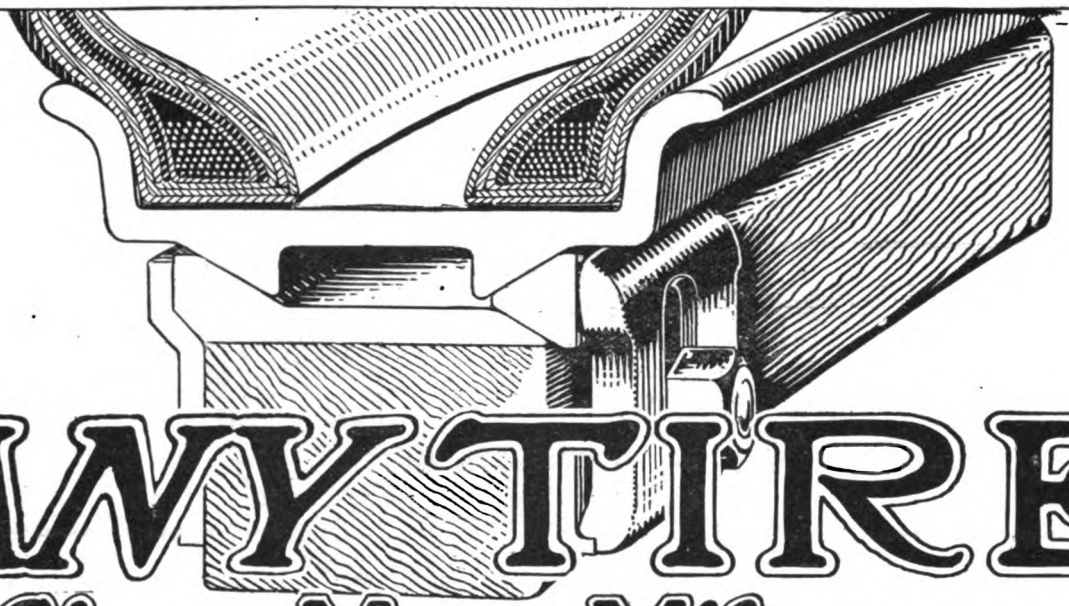
Chicago, Ill., 910 South Michigan Ave.
Detroit, Mich., 802 Woodward Ave.

THE

EISEMANN

MAGNETO

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ANY TIRE Gives More Miles on Firestone Rims

FIRESTONE Rims are another example of Firestone leadership. If all cars were equipped with Firestone Rims, motorists would save millions of dollars a year. Tires now worn out unevenly and prematurely on squeaking, wobbly rims would give more miles of service and infinitely more satisfaction to owners.

Only Rim Made by Tire Maker

Firestone long ago realized that a good Rim was essential to tire satisfaction. The market was searched and none was found. So Firestone went into the Rim business that car owners might have a 100 per cent rim. Time has proven that tire men can build the best Rim.

Change Tire in 5 Minutes

You can actually do this with Firestone Rims. No wedges to stick, no bolts to bend while prying them out. Of 184 car manufacturers who use demountable rims, 136, or over 70 per cent, use Firestone Rims and will furnish them without cost to you.

If your present car is not equipped with our Rims, it will pay you to change to Firestone, pay you in extra tire-mileage, freedom from annoyance of squeaking rims. No matter where you are, you are always near one of our 52 branches, or one of our several thousand agents and dealers who carry Rims in stock and will serve you efficiently. No other Rim offers you these advantages.

FIRESTONE TIRE AND RUBBER COMPANY
Akron, Ohio Branches and Dealers Everywhere

Digitized by Google

The Peerless Dealer's Big Advantage

Gentle—Mighty

—in its ultra soft smoothness —in its display of resistless power

Among the master cars of the day—the cars of real class and distinction—there are those that fully meet the demand for tremendous power and speed, those that satisfy the demand for ultra so t smoothness and those that strike a fair compromise between these conflicting virtues.

The "Loafing" Range

But without sacrifice or compromise the Peerless squarely meets these conflicting demands of the motor wise—with two entirely separate and distinct power ranges that also effect operating economies.

For all its mighty eighty horsepower, available to the full whenever you call upon its "sporting" range, it is ideally soft and smooth for ordinary driving in its "loafing" range—and sparing in its use of fuel.

The "Sporting" Range

Peerless

TWO POWER RANGE

Eight

In its "loafing" range, which is all you will ever use in ordinary about-town driving, the Peerless Eight is an ideally soft, smooth, flexible car, performing on half rations—using fuel so sparingly as to shame many a lesser powered six, even many a four.

The Peerless dealer has only to show the Peerless Eight and demonstrate the wonderful contrast in performance and the remarkable economy of operation accomplished by its two separate and distinct power ranges, to completely captivate the prospective purchaser.

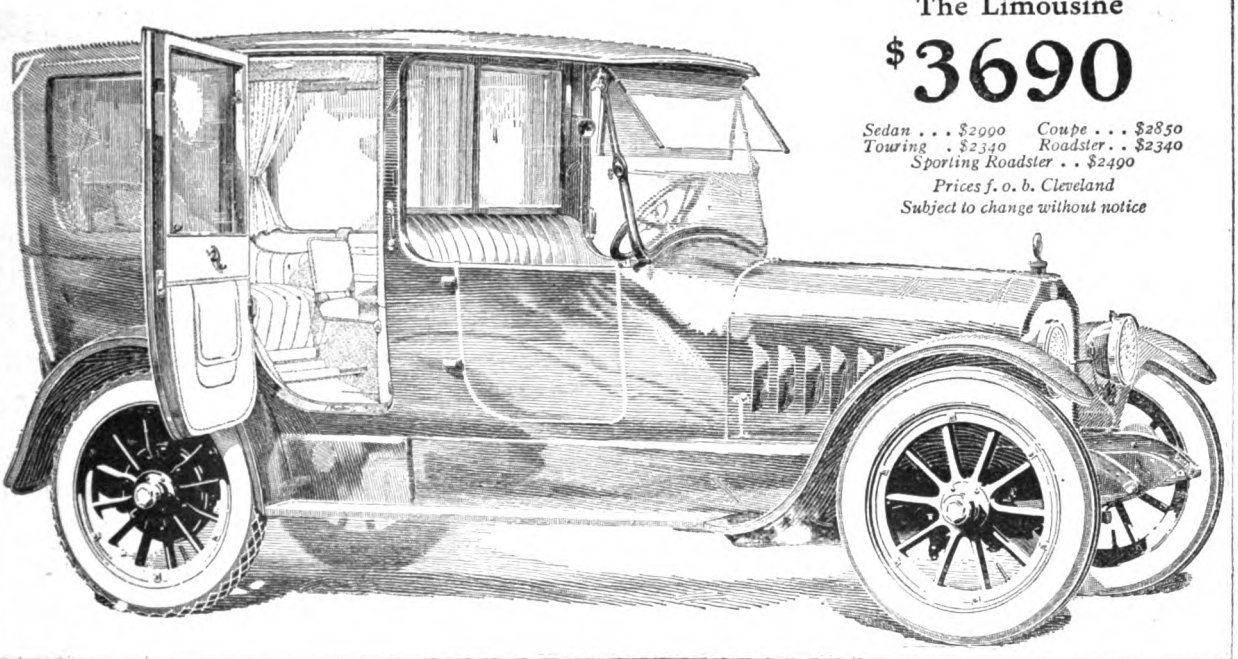
You have only to open the throttle wider to release its double poppets and call upon its "sporting" range for such an exhibition of power and speed as would balk all but a few of the master cars that are designed to display these rugged virtues only.

The Peerless Motor Car Company, Cleveland, Ohio

The Limousine

$3690

Sedan . . . $2990 Coupe . . . $2850
Touring . $2340 Roadster . . $2340
Sporting Roadster . . $2490
Prices f. o. b. Cleveland
Subject to change without notice



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WILSON TRUCKS

THE Call to Duty is being very keenly felt by motor truck dealers and owners due to the unusually large enlistment of skilled service men. Wilson dealers and owners are particularly fortunate because the extreme simplicity and harmonious design of Wilson Trucks permit the average driver to make necessary repairs.

J. C. WILSON COMPANY
489 Warren Avenue, West, Detroit

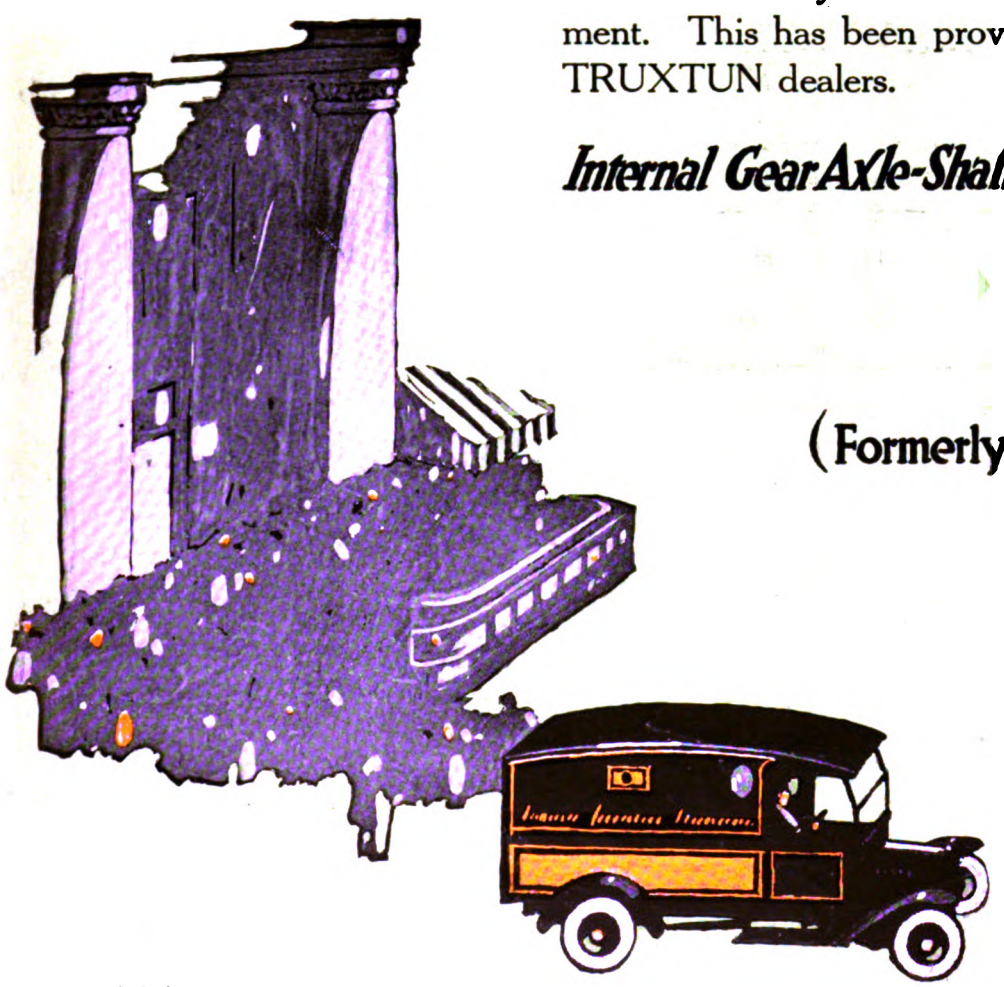
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Repeat Orders

A dealer can sell only ONE pleasure car to each customer. But with TRUXTUNS the selling possibilities are much greater. The first TRUXTUN sold to a customer is often merely a beginning. You may make two, three or a dozen sales to the same man after he learns the many merits of this low cost truck attachment. This has been proved to the profit of dozens of TRUXTUN dealers.

Internal Gear Axle-Shaft Drive—NOT a Chain Drive

(Formerly HUDFORD)



Model A
Makes any FORD into a 1½-ton Truck; standard wheelbase length, 124″ or 112″ . . . **$390**
Special wheelbase, 136″ $410

Model B
Makes any FORD into a 2-ton Truck; standard wheelbase length, 126″ . . . **$490**
Special wheelbase, 138″ $510

Prices f. o. b. Philadelphia and Detroit



COMMERCIAL CAR UNIT CO · PHILADELPHIA

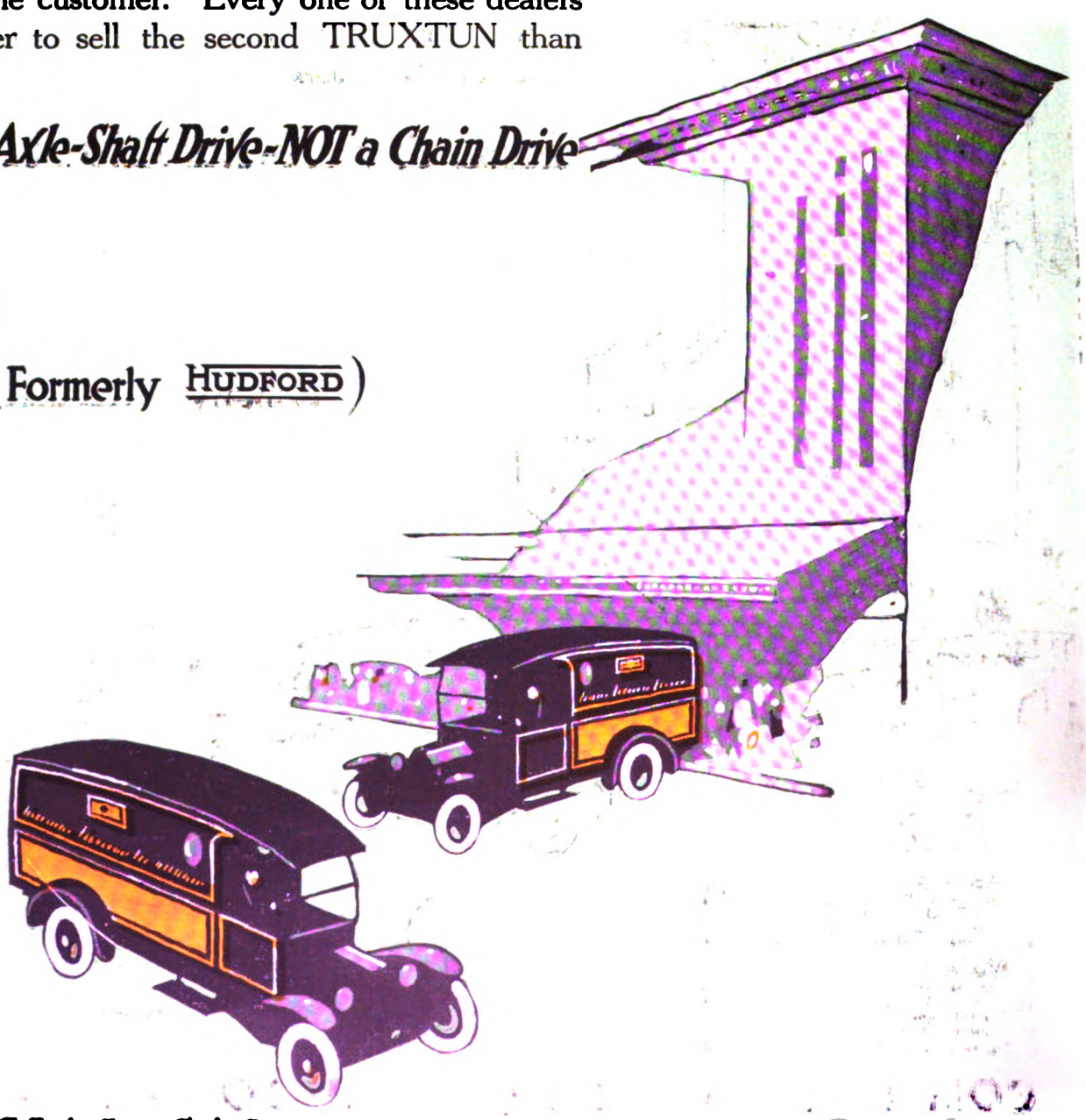
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Repeat Orders

There are a number of reasons why it is easy and profitable to sell TRUXTUN Units. One of these reasons is that the selling effort you use in making the first sale goes on working long after that particular sale has been completed. TRUXTUN dealers in very small towns have many times found it possible to sell two or three TRUXTUNS to a single customer. Every one of these dealers say it was easier to sell the second TRUXTUN than the first.

Internal Gear Axle-Shaft Drive-NOT a Chain Drive

(Formerly HUDFORD)



OMMERCIAL CAR UNIT CO · PHILADELPHIA

Repeat Orders

Many TRUXTUN dealers are finding a gold mine in the REPEAT orders which they get with very little effort from firms that already own one or more of these economical trucks. One of our dealers sold forty TRUXTUNS to one firm. The first sale made easy sailing for the other thirty-nine. This is only one of hundreds of cases where the TRUXTUN Unit practically sold itself. Every man who buys a TRUXTUN continues to be a prospective buyer.

Internal Gear Axle-Shaft Drive-NOT a Chain Drive

(Formerly HUDFORD)



MMERCIAL CAR UNIT CO · PHILADELPHIA

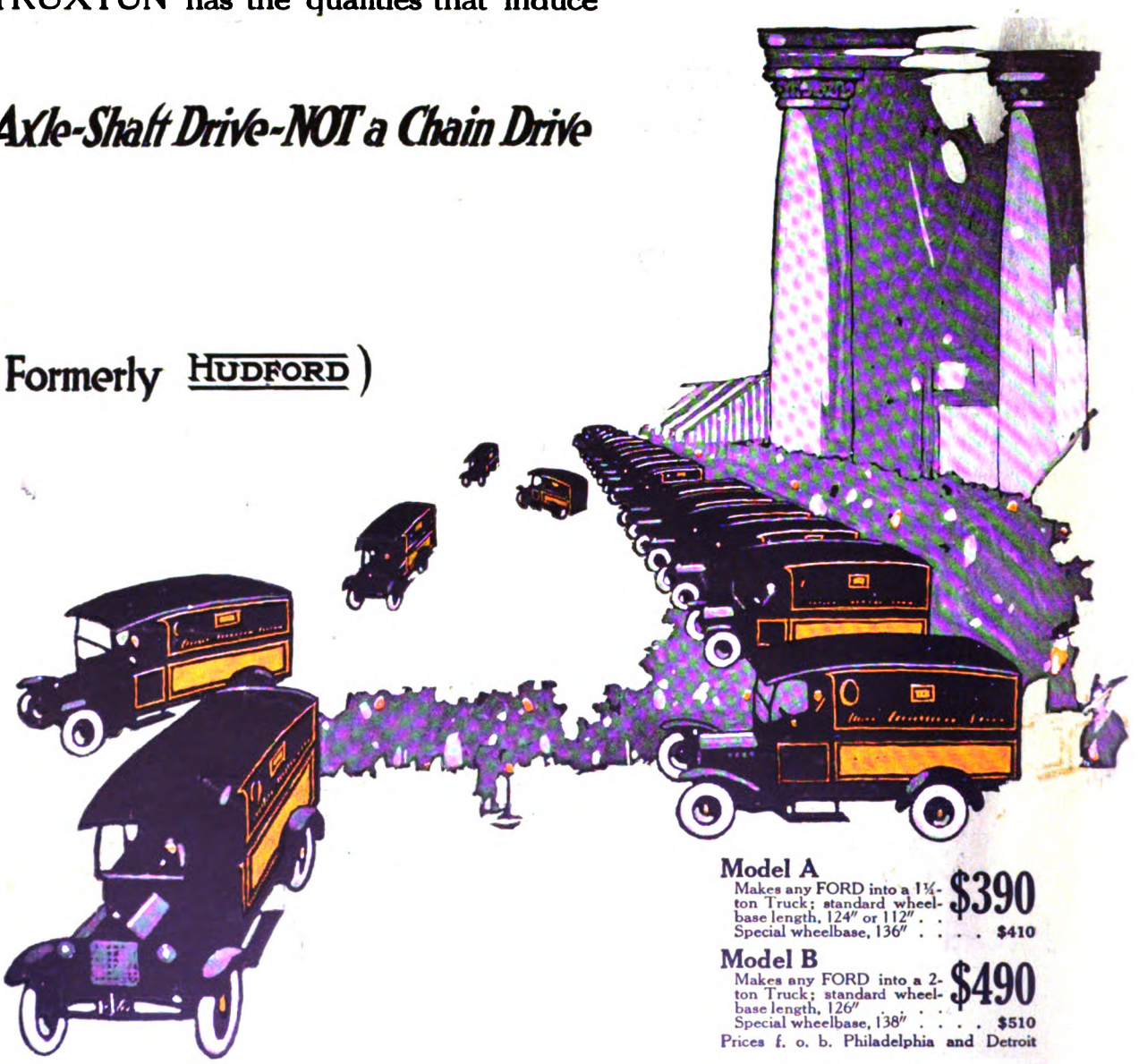
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Repeat Orders

We are anxious to secure live, active representation for TRUXTUN in every locality. Aggressive men will find the TRUXTUN a profitable proposition to handle. Everywhere small trucks are in demand. Everywhere there are used *Fords* that can profitably be converted into TRUXTUN trucks. Sell one TRUXTUN and you will sell more—for TRUXTUN has the qualities that induce REPEAT sales.

Internal Gear Axle-Shaft Drive-NOT a Chain Drive

(Formerly HUDFORD)



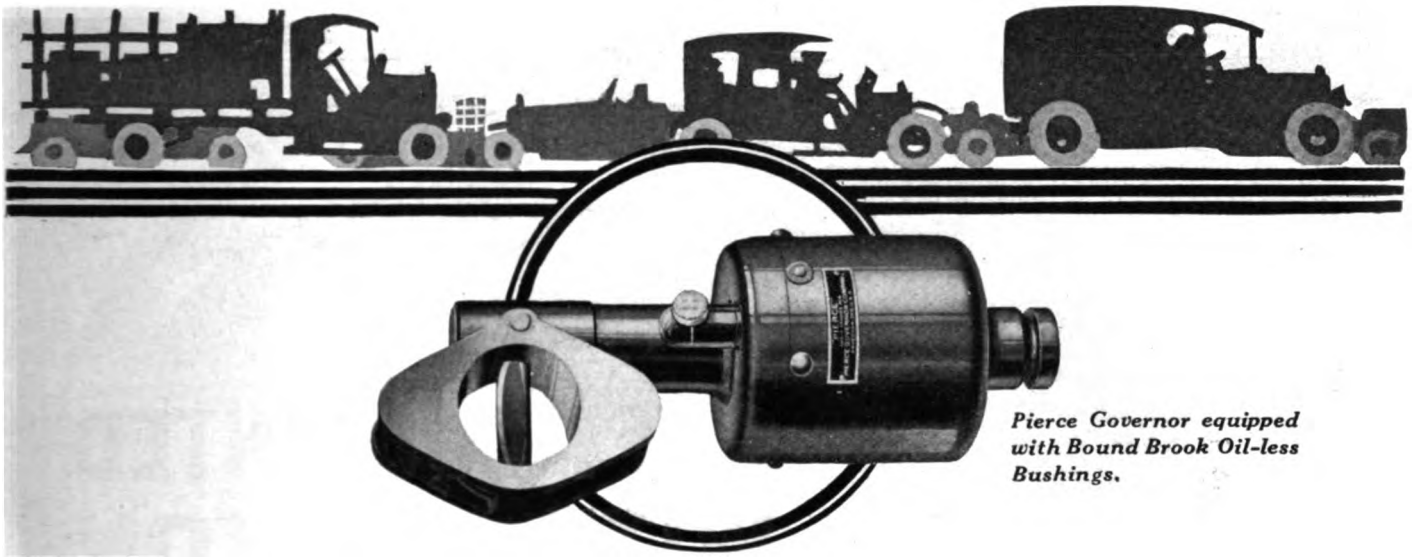
Model A
Makes any FORD into a 1¼-ton Truck; standard wheelbase length, 124″ or 112″ . . $390
Special wheelbase, 136″ $410

Model B
Makes any FORD into a 2-ton Truck; standard wheelbase length, 126″ . . . $490
Special wheelbase, 138″ $510

Prices f. o. b. Philadelphia and Detroit

COMMERCIAL CAR UNIT CO · PHILADELPHIA

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Pierce Governor equipped with Bound Brook Oil-less Bushings.

The Controlling Factor

must be fool-proof and trouble-proof. Therefore the Pierce Company has equipped their famous GOVERNOR with

BOUND BROOK

(Trade Mark Reg. U. S. Pat. Off.)

OIL-LESS BUSHINGS



The Pierce Governor "takes care" of the truck, regulates its speed to prevent accident and undue wear and tear.

Obviously it must take care of itself. It must not be dependent upon the driver for oiling or other attention. It must run continuously with accuracy and smoothness, and outlast the truck.

BOUND-BROOK (Graphite-and-Bronze) Oil-less Bushings help it to do this. They are made of finest phosphor bearing bronze so designed and constructed as to retain lubricating graphite. This lubricant is specially prepared and is part of the bushings themselves.

These bushings run efficiently with or without oiling, attended to or neglected. They are fool-proof, trouble-proof, neglect-proof.

Leading manufacturers of motor cars, airplanes and machinery of every conceivable description are using these bushings. In inaccessible places, subject to neglect, they give a quality and length of service that no ordinary bushing can hope to approach.

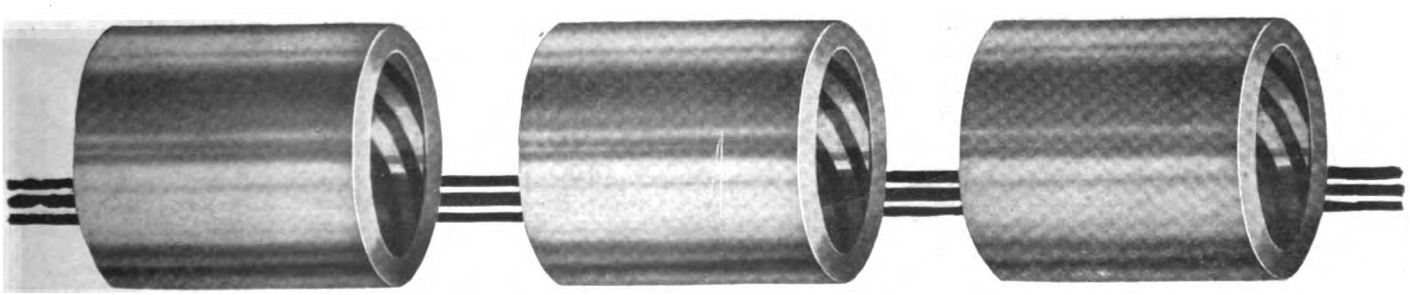
We also manufacture NIGRUM (Trade Mark Reg. U. S. Pat. Off.) Impregnated Wood Oil-less Bushings.

All Genuine Graphited Oil-less Bushings have always been made at Bound Brook, U. S. A.

BOUND BROOK OIL-LESS BEARING CO.

Specialists in the manufacture of Oil-less Bushings for more than a third of a century.

BOUND BROOK NEW JERSEY



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GET ACQUAINTED WITH AMAZON

ANNOUNCEMENT

TO JOBBERS AND DEALERS

This announcement is the first of a series of advertisements that will appear regularly in this publication under the caption of "Getting Acquainted With Amazon."

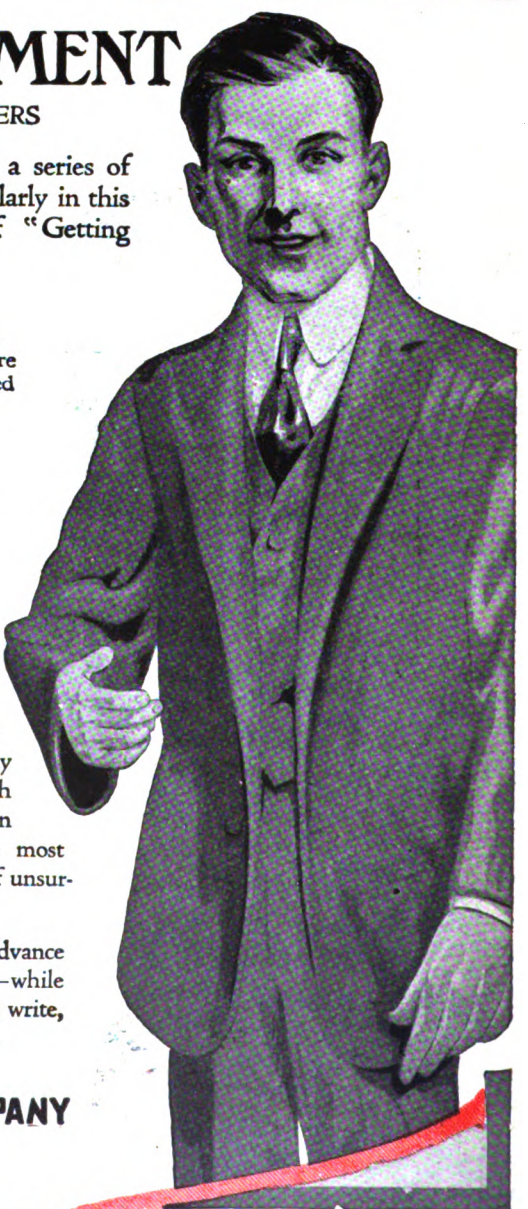
Various points to be discussed are:

1. The TREAD of the Tire
2. The CARCASS of the Tire
3. Exclusive Territory Offered
4. Free Advertising
5. The PROFITS
6. Permanent Customers
7. Our Cordial Relations
8. PROOFS of all Claims

To enable you to easily recognize and follow these discussions as they appear, the same figure will be used throughout the series—look for his cordial smile—it is indicative of Amazon.

By the time you have read the entire series, we are sure you will be seeking our proposition to jobbers and dealers. Many will not wait—but will get in touch with us and secure full advance information direct from the factory. We have a most interesting proposition—and a TIRE of unsurpassable merit to back it up.

If YOU would like to learn now in advance the details of what we have to offer—while your competitor may be "waiting"—just write, wire, phone or call on us here in Akron.



THE AMAZON RUBBER COMPANY
AKRON, OHIO

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Acason THE OWNER FIRST

Acason THE OWNER FIRST TRUCKS

TRUCKS

TRUCKS

TRUCK PROFITS

The essentials for a profitable motor truck dealership are:

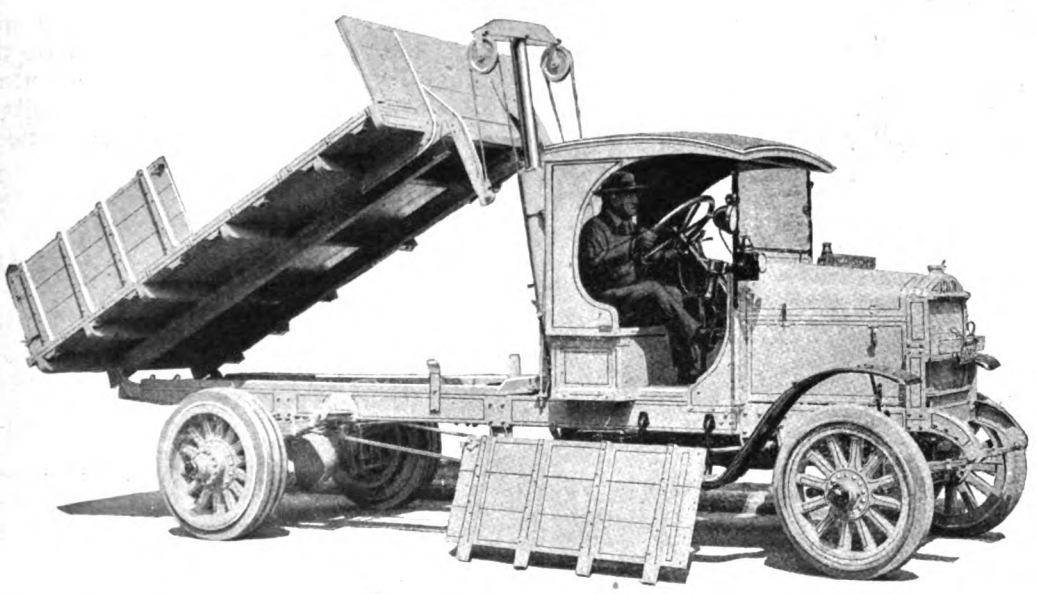
Dependable trucks.
A complete line of models.
Prompt deliveries.
An "Owner First" service policy conscientiously followed out.

These sum up the Acason policy that has made the Acason truck so remarkably popular among the unusually exacting truck buyers in Detroit.

Some desirable territory still open.

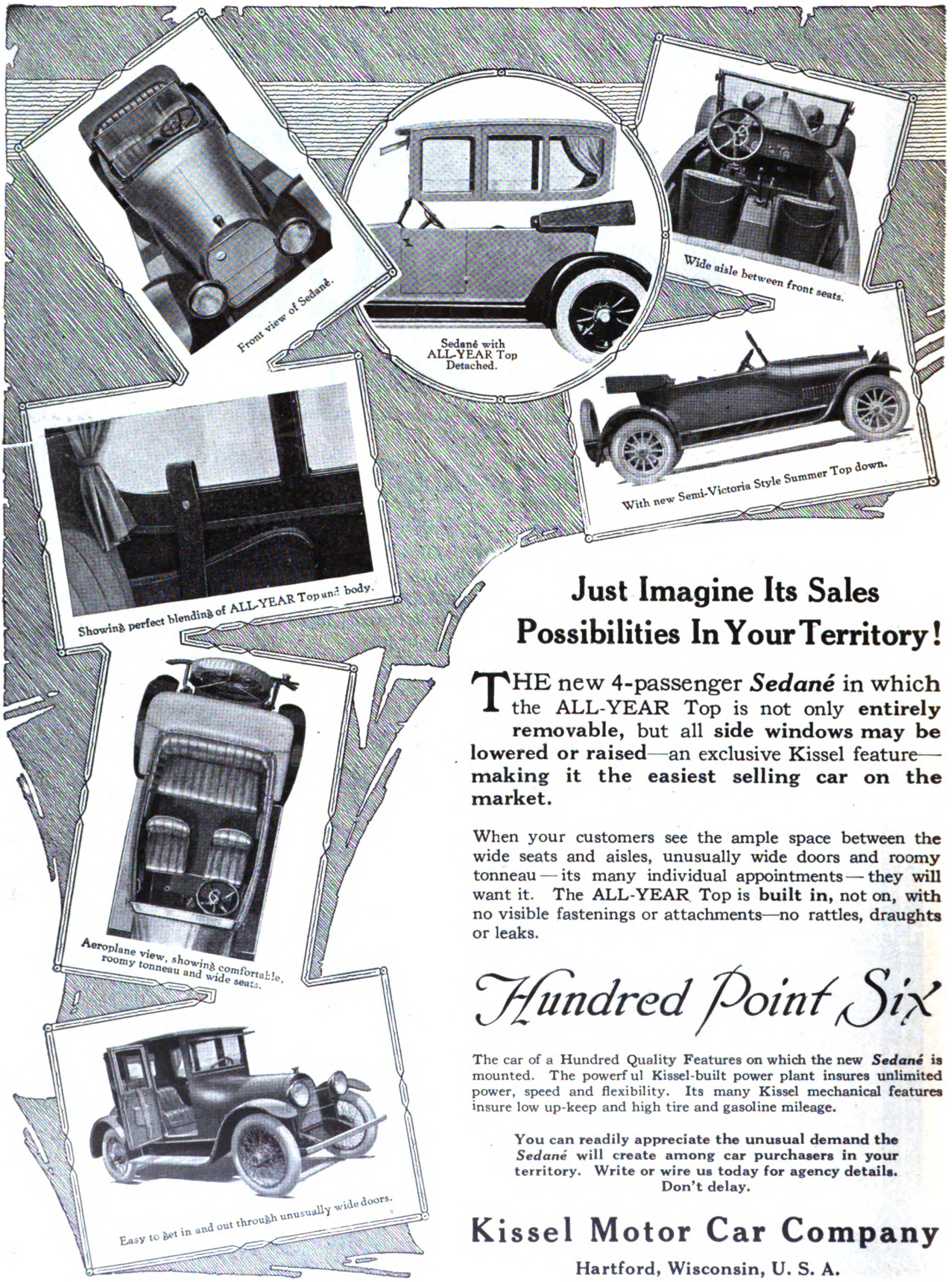
1½-ton Truck..$2100 3½-ton Truck..$3200
2 -ton Truck..$2400 5 -ton Truck..$4200
Light Tractor $2500
Heavy Duty Tractor..$3800

ACASON MOTOR TRUCK CO.
DETROIT



THE OWNER FIRST

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Just Imagine Its Sales Possibilities In Your Territory!

THE new 4-passenger ***Sedané*** in which the ALL-YEAR Top is not only **entirely removable,** but all **side windows may be lowered or raised**—an exclusive Kissel feature—**making it the easiest selling car on the market.**

When your customers see the ample space between the wide seats and aisles, unusually wide doors and roomy tonneau—its many individual appointments—they will want it. The ALL-YEAR Top is **built in,** not on, with no visible fastenings or attachments—no rattles, draughts or leaks.

Hundred Point Six

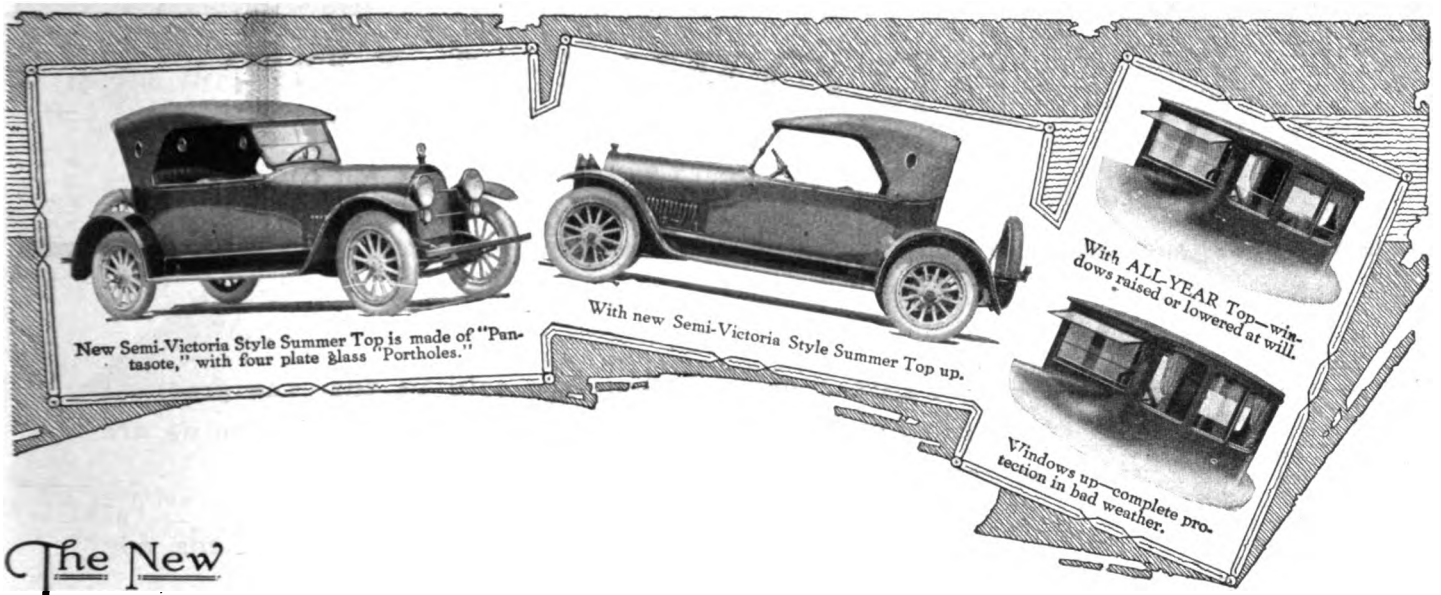
The car of a Hundred Quality Features on which the new ***Sedané*** is mounted. The powerful Kissel-built power plant insures unlimited power, speed and flexibility. Its many Kissel mechanical features insure low up-keep and high tire and gasoline mileage.

You can readily appreciate the unusual demand the *Sedané* will create among car purchasers in your territory. Write or wire us today for agency details. Don't delay.

Kissel Motor Car Company

Hartford, Wisconsin, U. S. A.

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The New

KISSELKAR

4 Passenger

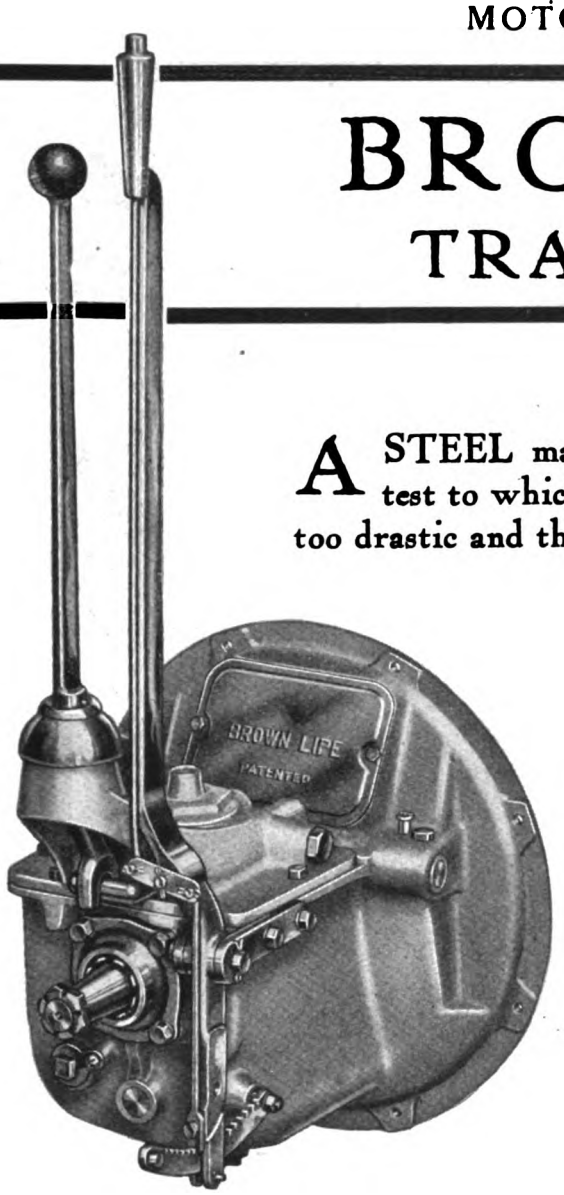
Sedané

The latest development of Kissel's original idea that changed the motoring habits of a nation.



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BROWN-LIPE TRANSMISSIONS



Model 30-3 U. P. P.

A STEEL maker not long ago told us that the practical test to which we subject our gears after hardening are too drastic and that our requirements are too severe.

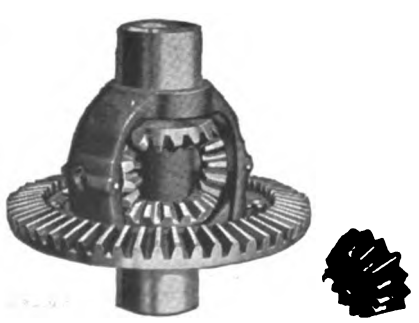
But we haven't changed our methods, nor are we going to.

We have been and will continue to be exacting about the quality of the steel that we use even in these days of insufficient supply.

Likewise we are exercising an even greater degree of care than ever before in the inspection following the heat treatment of our gears;

For on the results of this operation properly performed depends their success in meeting the tireless demands of service day-in and day-out the years around.

Our Engineering Departments will assist in solving your transmission and differential problems. Write us today.



Bevel Type Differential used by Dort Motor Car Co., Inc. Axles built by Walker Weiss Axle Co., Flint, Mich.

BROWN-LIPE-GEAR CO.
TRANSMISSIONS

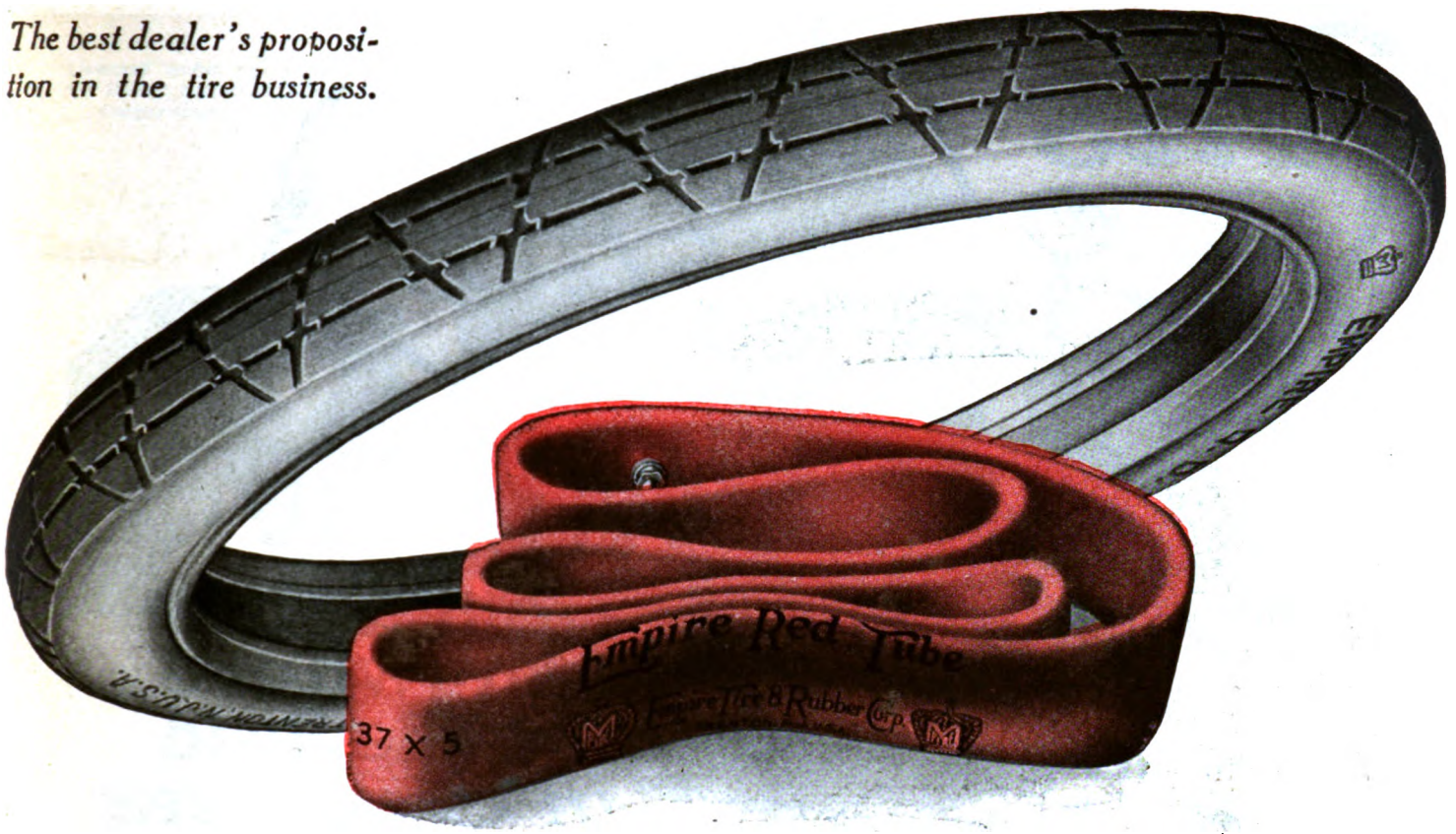
BROWN-LIPE-CHAPIN CO.
DIFFERENTIALS

Syracuse, New York

REPRESENTATIVES
New York: Thos. J. Wetzel, 29 West 42nd Street
San Francisco: A. H. Coates, 444 Market Street
Foreign Agent: Benjamin Whittaker, 2 Norfolk Street Strand, London, W. C.

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The best dealer's proposition in the tire business.



The tire is as good as the tube
The tube is as good as the tire

For 10 years Empire Red Tubes have been recognized by the trade and car owners as the best on the market. They have come to be called "the tubes that outlive the car itself."

And Empire Casings have won the same high standing. Actual records prove that the ***average*** Empire, in ***average*** running, will deliver thousands of ***extra miles.***

The same fine materials, the same painstaking workmanship, the same secret processes which for 30 years have made the name Empire famous for long life in rubber goods of all kinds, account for the surplus quality of every Empire tire product.

For dealers the Empire proposition is the best in the field.

The margin of profit is the fairest. The sales are increasing the fastest.

And the advertising is wide-spread, powerful and unique. Our full pages in The Saturday Evening Post, The Literary Digest and elsewhere are signed, not with our own name, but as follows: "The Empire Tire Dealer."

Thus we centre the consumer's attention, not on our factory, but on your store, in his own home town.

Empire advertising thus becomes your own advertising, addressed to the car owners of your own locality.

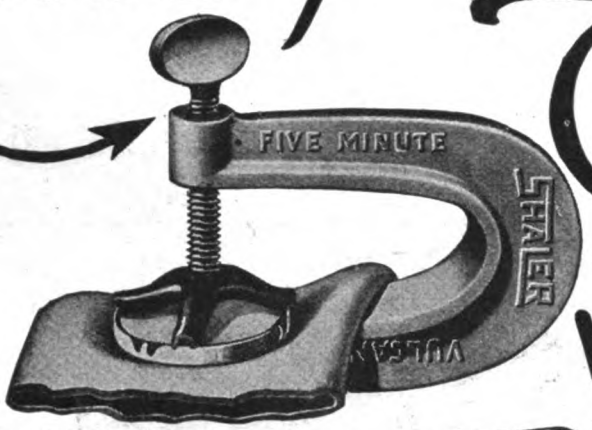
Write for our proposition today.

THE EMPIRE RUBBER & TIRE COMPANY
TRENTON, N. J.

Empire Tires

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This plus This





WILL VULCANIZE

$1.50 COMPLETE WITH 12 DISCS & 12 PATCHES



Your Tubes Anywhere on the Road *in 5 minutes*

The Sales-Wonder of the Day—Stock It, Mr. Dealer!

A Perfect Patch In 5 Minutes!

A clamp, a dozen patches and a piece of sandpaper neatly boxed—that's all there is to a complete outfit. Each patch is complete in itself, consisting of a metal pan containing a combustible material which furnishes the heat, and a piece of quick curing Para rubber on the other side of the pan. You simply clamp the pan over the puncture and light the heat unit with a match or lighted cigar or cigarette stub. It creates just the right amount of heat to vulcanize the rubber firmly on the tube, making a perfect, permanent patch in five minutes.

Positively no danger of ever burning the tube. No heat reaches the tube surrounding the patch. There is no flame or blaze.

OVER 100,000 of these wonderful vulcanizers sold last year with scarcely any advertising. Thousands and thousands more are being sold this year as a result of our national advertising. We are just starting another big campaign. Our heavy advertising, reaching all car owners, will make the Shaler 5-Minute Vulcanizer one of the best selling auto accessories ever put on the market. Motor car owners know the Shaler and call it by name. Stock it, Mr. Dealer—get *your* share of the big business.

SHALER

Manufactured under Low & Miles Patent

5-Minute Vulcanizer

The Shaler 5-Minute Vulcanizer is manufactured by C. A. Shaler Co., the oldest and largest makers of vulcanizers in the world. Besides the Shaler 5-Minute Vulcanizer at $1.50 there are other models for Motorists and Garages from $1.75 up, as well as complete plants for public repair shops. Write today for our new catalog and dealer's discounts and terms.

Ask Your Jobber's Salesman About It

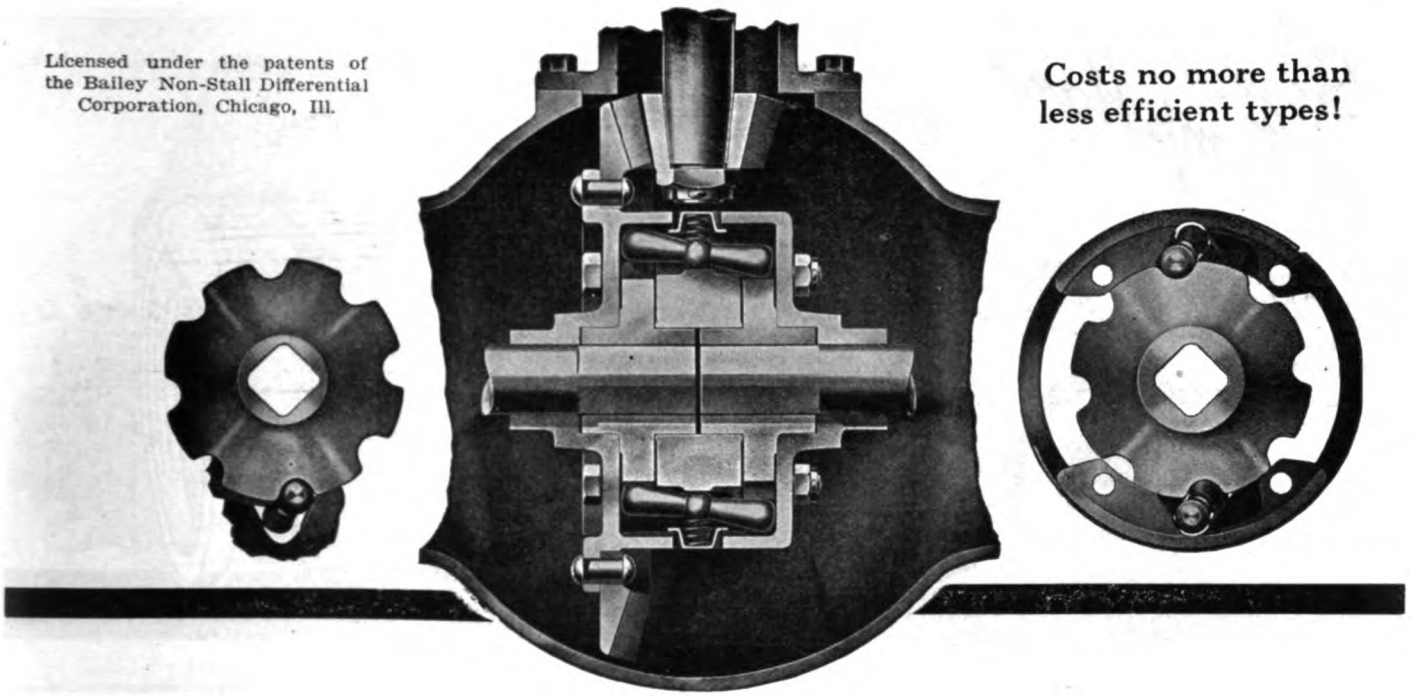
C. A. SHALER CO., 443 Fourth Street, Waupun, Wis., U.S.A.

When writing advertisers please mention Motor World—It identifies you

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Licensed under the patents of the Bailey Non-Stall Differential Corporation, Chicago, Ill.

Costs no more than less efficient types!



Automobile and Axle Builders—

Send for the Bailey Non-Skid, Non-Stall Differential and put it into your testing car—it requires no change of housing or bearing lay-out. Try it out through mud, sand, slush, snow and over wet asphalt and you will find a steady, straight, forward pull that keeps the car moving ahead *with all wheels in line.*

Notice the perfect compensation in turning corners, and the absence of wheel spinning, side-sway, and skidding on the straightaway that always accompany an ordinary gear differential. These features are strong selling arguments that the motoring public are quick to grasp—start your investigation soon.

BAILEY NON-SKID NON-STALL DIFFERENTIAL

Not only compensates perfectly in turning but on straightaway locks to drive both rear wheels, *positively and equally* on a practically undivided axle. This equalized driving power, impossible with an ordinary differential, keeps the car from swerving at high speed or on slippery road, keeps one wheel from spinning while the other is embedded in sand, mud, or snow, and therefore assures safe and sure passage on roads where a gear-differential-equipped car would skid or stall.

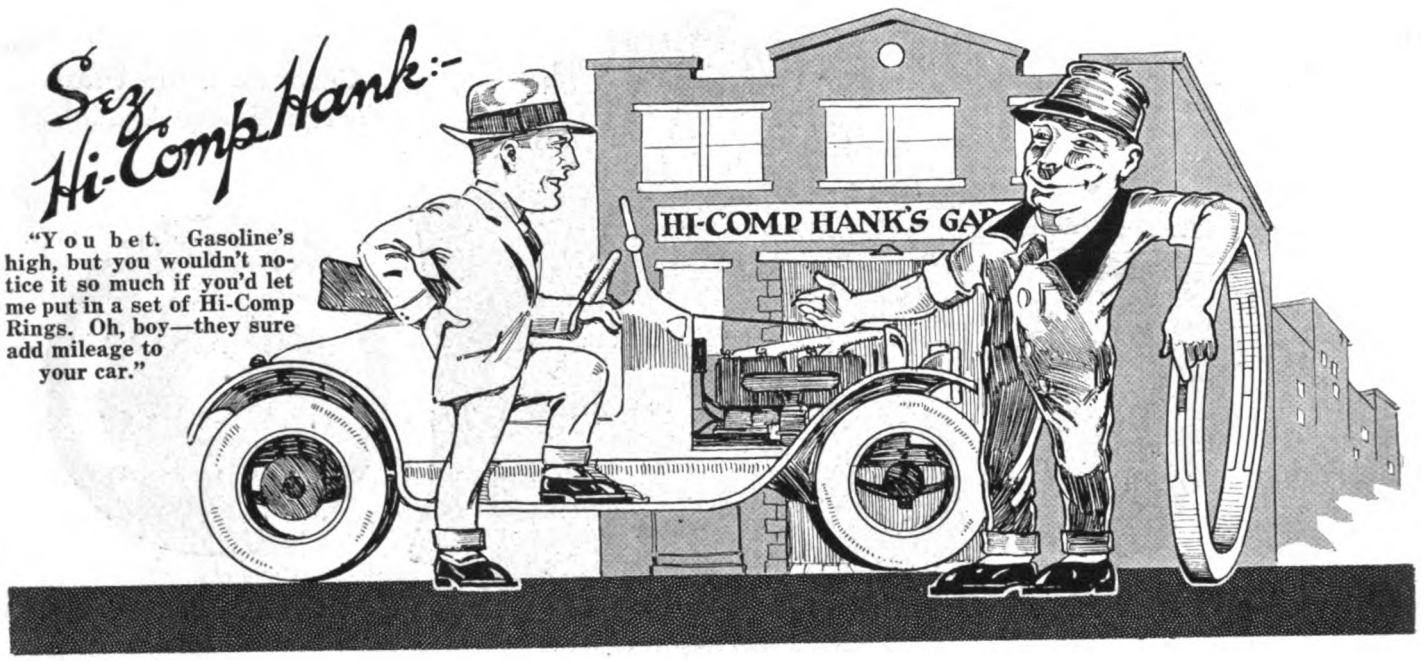
Obviously, then, the equalizing power distribution also makes steering easier, makes the car hold to the road better, protects tires from disastrous grinding and tearing and by holding down the wheel travel to the fewest revolutions for given distance, reduces power waste and steadies engine speed.

N.P.R.H. REG. U.S. PAT. OFF. NEW PROCESS N.P.R.H. REG. U.S. PAT. OFF.

GEAR CORPORATION

SYRACUSE, N.Y.

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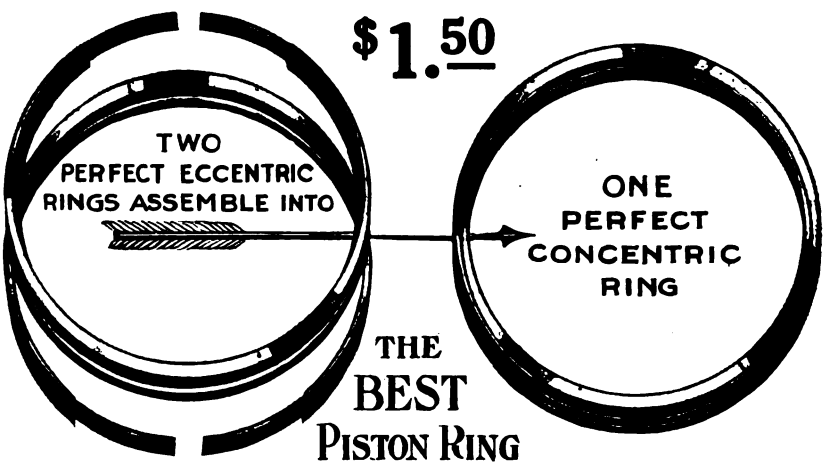


HI-COMP RINGS ARE RIGHT

Send for Hi-Comp Hank's Order and Specification Book



HI-COMP PISTON RING
"THE RING THAT MAKES THE MOTOR SING"

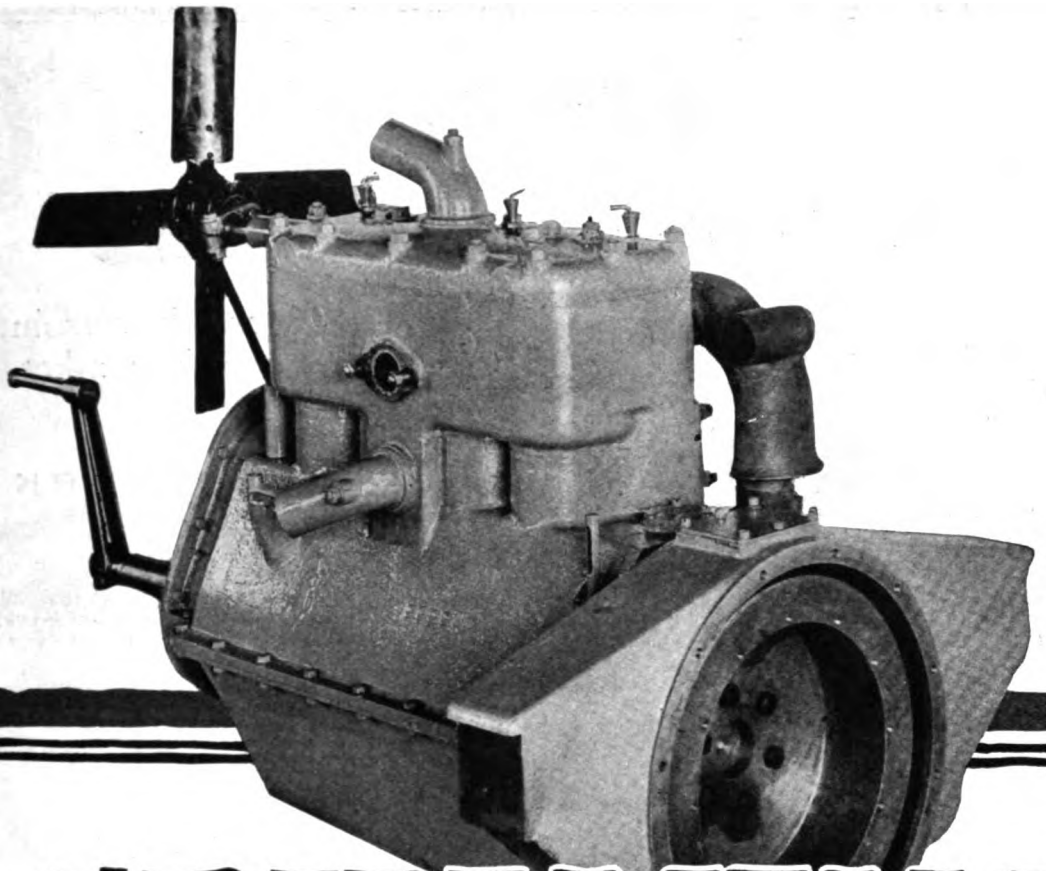


THE BEST PISTON RING

The Perfectly Balanced Piston Ring. The One-Priced Piston Ring. Puts Power and Pep in the motor, saves gasoline and oil. The perfect compression attained by the Hi-Comp Ring increases efficiency of carburetor and of starting system; prevents oil and soot from fouling spark plugs; prevents formation of carbon. Send for "Order and Specification Book," which lists sizes for all cars. Principal jobbers carry Hi-Comps in stock.

CONTINENTAL PISTON RING CO.
MEMPHIS . . . . TENN.

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SPILLMAN 4

3¼ x 5 — 4 CYL

MOTOR CAR DEALERS everywhere have noted the return to popularity of the powerful, reliable "4".

In selecting the car you are going to handle in 1918 consider the tremendous selling power of a **good engine!** It is the very life and heart of the car. "Engine trouble" will kill your sales, while **engine performance and reliability** will increase them, will hold old customers and bring new ones.

The SPILLMAN "4" is a proved performer. In power, accessibility, simple design, rugged build, speed and hill-climbing ability it has proved itself the superior of any other engine in its class.

Hook up with a SPILLMAN-equipped car!

EIGHTS	FOURS
3¼ x 5	3¼ x 5

HERSCHELL-SPILLMAN COMPANY

Builders of Automobile Motors

North Tonawanda New York

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100% Dealer's Profit



can be made on Orez, the best and cheapest anti-freeze solution on the market.

TRADE **OREZ** MARK

ANTI FREEZE SOLUTION

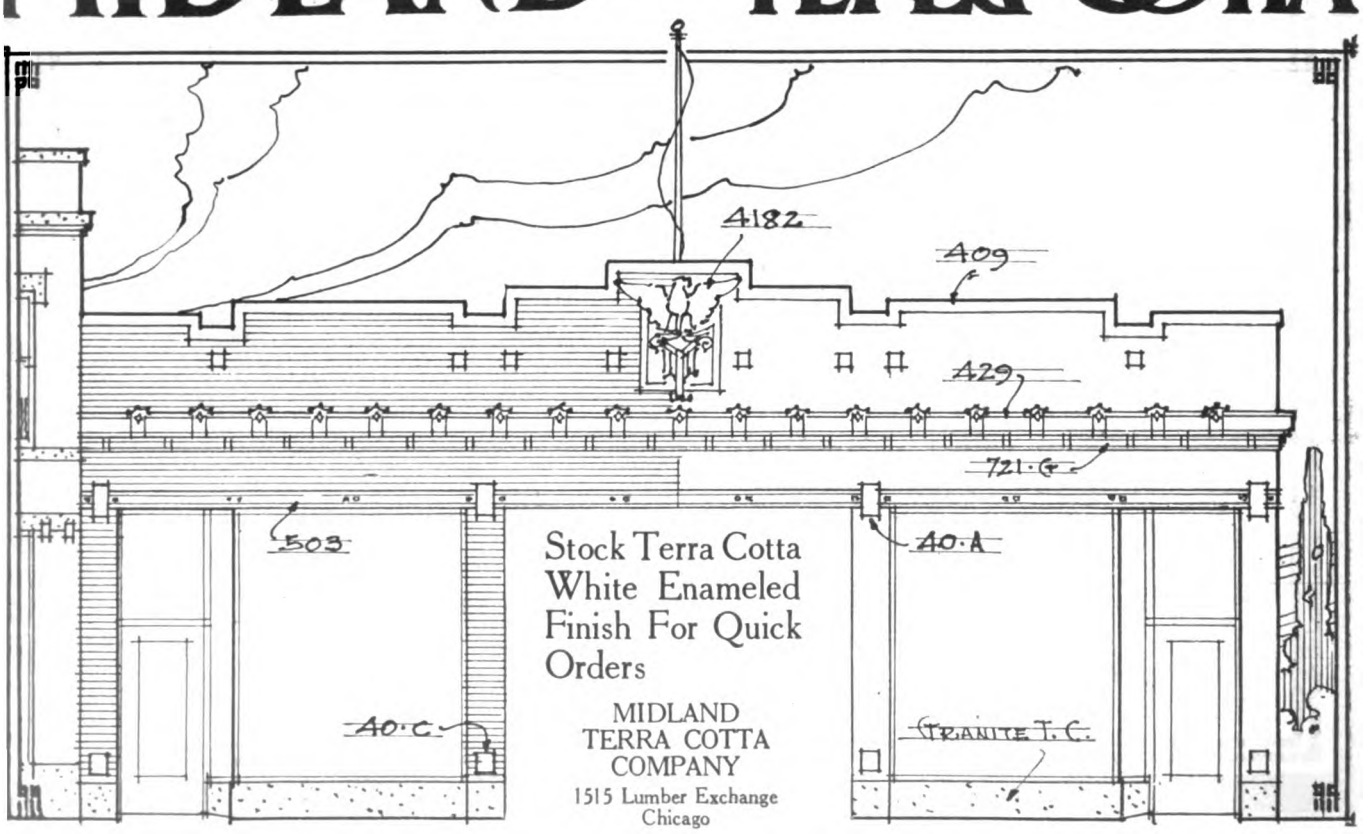
One charge insures the car against freezing for all winter.
A secret chemical composition which is non-acid and not injurious to metals or rubber. It prevents the formation of lime in the water and is non-poisonous to the skin.
Orez is shipped to you in crystal form in bags which make 50 gallons of the liquid.
This is the smallest quantity sold. You knock the head out of an old barrel, pour in the crystal, fill with water and stir until dissolved—ten minutes' work.
We pay the freight, pay for the barrel on the first order and furnish a spigot.
Price to you, 50 gal. bag, $12.50—selling price, 50c. per gallon, or $25.00—100% profit.

Remember—it's Orez
Zero spelt backward

Prepare for winter—order at once.

OREZ MANUFACTURING COMPANY
WEST MIDDLETOWN OHIO

MIDLAND TERRA COTTA

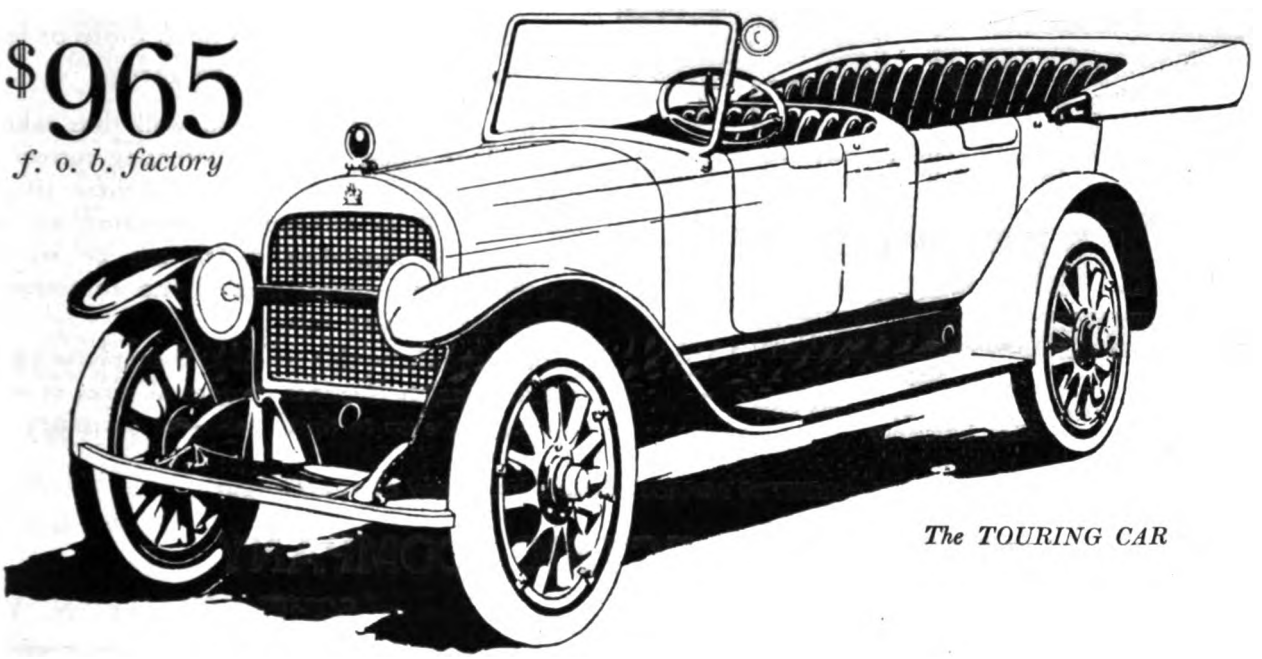


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OLYMPIAN

$965
f. o. b. factory



The TOURING CAR

Three Reasons Why Dealers Want the Olympian

One—The car is a winner—looks like one—performs like one—and sells like one. There's not another like it within hundreds of dollars of the Olympian price.

37 h. p. 4-cylinder motor
18 miles per gallon
114-inch wheelbase
double cowl body
cantilever rear springs
full floating rear axle
vacuum gasoline system
factory equipment including bumper, spotlight motometer and ignition lock

Two—The organization back of it is well established, well manned, and well financed. The Olympian plant in Pontiac is perfectly equipped—amply able to care for our increased production in 1918.

Three—The Olympian dealer policy is broad and liberal. And we have a unique system that enables us to furnish our dealers with an unusually large number of sales prospects.

Olympian dealers everywhere are enthusiastic over the way the car has taken hold. It has proved itself a big seller—a *live one.*

And we are just getting started. Our big plans for 1918 are fully warranted by our rapid growth and the great success we have already established.

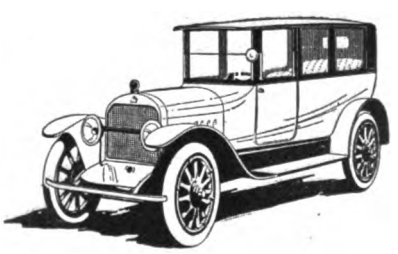
Experienced dealers who know our product, our organization, our policy and our plans are eager to talk business.

If you are in a position to take on a 4-cylinder car of the Olympian price—$965—wire or write us today.



The COUPE

This model offers all the comfort and convenience demanded in a closed car—with ample room for three.
Price $1340

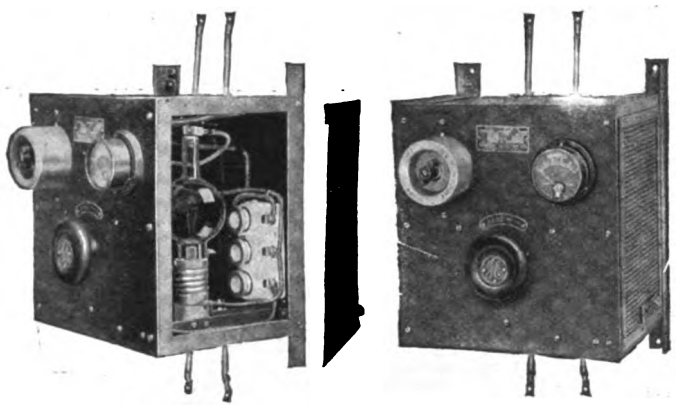


The SEDAN

Easily convertible from an open car to a snug limousine. Change is made easily and quickly.
Price $1565

OLYMPIAN MOTORS CO., Pontiac, Michigan

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Booklet B-3412 gives full information about this 6 amp. 75 volt Tungar

Tungar
RECTIFIER

Low First Cost Low Operating Cost
High Efficiency

Turns a Nuisance Into a Profit

The Tungar Rectifier will enable you to make a good profit on battery charging—a service which has hitherto been more or less of a nuisance to the average garage.

The Tungar fastens to the wall thus taking up no floor space. It uses alternating current at a cost of but six cents an hour for three 10-cell batteries. It is self-starting requiring no attendant. A regulating switch can be set instantly for any current needed and an ammeter shows the charging rate.

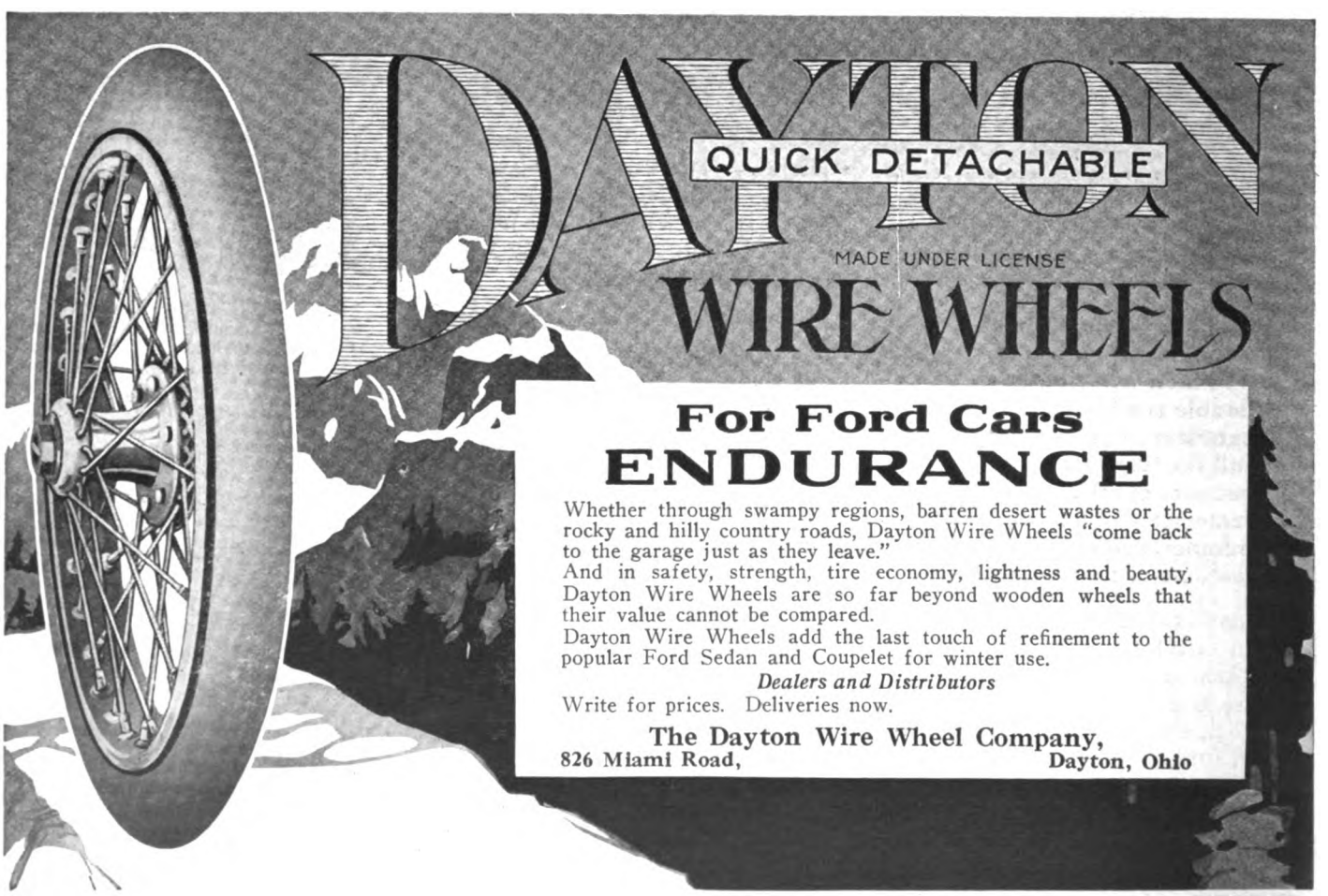
Fool proof, trouble proof and simple to operate the Tungar Rectifier charges all sizes of storage batteries up to thirty cells—at a profit.

Ask us what dozens of service station users say about Tungar

GENERAL ELECTRIC COMPANY

General Office: SCHENECTADY, N. Y.

74



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Cash In on the Demand we are Creating for

KOR-KER Tire Treatment

It's a Time-Tested Proven Success.

Kor-Ker *seals punctures* instantly and permanently. It ferrets out and *stops slow leaks*. Kor-Ker *prevents under inflation*—you dealers know what that means to the life of a tire.

Kor-Ker is a *preservative of rubber*. Not a filler.

We *guarantee* it *will not injure* but, on the contrary, *give them longer life*.

Motorists have tried Kor-Ker out and found it's *made good* under the *most severe tests*.

We have distributors in U. S., Canada, England, France, Russia, Norway, Sweden, Holland, Spain, Portugal, India, Egypt, S. Africa, S. America, Australia, New Zealand, Java, Philippines and Trinidad.

ALCEMO MFG. CO.,
83 Bridge St., Newark, N. J.
Please mail me your book and your dealer proposition.
.....
.....



Driving Nail into Tire Treated with Kor-Ker Tire Treatment. This is the strongest proof anyone can ask and will convince the most skeptical.

(We are advertising KOR-KER for you in 25 leading magazines)

There's a big, liberal profit in it for you. ***But first make us prove to your own satisfaction that we've got the goods.*** Then let us tell you what other dealers are doing with Kor-Ker.

ALCEMO MFG. COMPANY, 83 Bridge St., Newark, N. J.



CURTIS AIR FREE FROM OIL

The Curtis Compressor is the only one designed to prevent flooding the cylinder with more oil than it needs for lubrication. This, because of our controlled-splash oiling system. No excess oil is forced into the air line. **Oil ruins tires**—air free from oil means fewer blowouts and increased mileage all around for your customers, with less tire adjustments to you. Make your place the most popular one in town. An easy and inexpensive way, is to install a Curtis Compressor. The customer assumes if you have the best free air service, you will have the best service in all departments.

Costs No More Than Ordinary Compressors—But Note The Difference

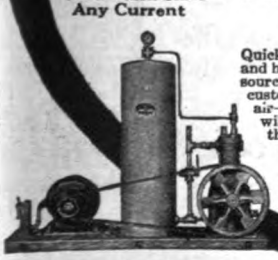
Live garages and service stations are using Curtis Air Compressors. Motorists expect free air service. Why not give them the best and win over new customers by supplying, not only reliable air service, but **Curtis Air—Free From Oil.** A poor air system which shoots oil into the tires, or which is unreliable, drives customers away. Thousands of Curtis Outfits are rendering daily, effective, efficient service all over the country. Your Curtis Compressor can further pay for itself by supplying air for air hoists, painting, cleaning, vulcanizing, blowing dust and drillings from tools, and many other things. Curtis Compressors are backed by manufacturers who have been specialists in this line for twenty-five years.



10 Combinations of Compressor and Tank Sizes—Any Current

Five Sizes—Tight Pulley Only, or Tight and Loose Pulley

11 Combinations of Compressor and Tank Sizes—Any Current



Makes New Customers—Holds Old Ones

Quickly pays for itself in bringing in new trade and holding the old trade, for it not only is the source of a dependable supply of air when your customers want it, but it also supplies clean, cool air—free from oil. Motorists realize that oil will quickly destroy their inner tubes, and, therefore, look for a station that supplies Curtis Air—Free From Oil.

Curtis Compressors are built to meet the requirements of your business in sizes, arrangements and prices. Send coupon at once for full information and attractive prices. It will pay you to investigate our proposition. *Write us today, or ask your jobber for prices—but insist on a Curtis.*

Winter Business—Cold Weather Made Profitable

Curtis Pneumatic Machinery Co.

1546 Kienlen Avenue St. Louis, Mo.
Hudson Terminal, New York

Curtis Pneumatic Machinery Co.

1546 Kienlen Ave. St. Louis, Mo.

Gentlemen: Please send me full details regarding Curtis Garage Air Compressor—your proposition and low prices.

Name.....

Address.....

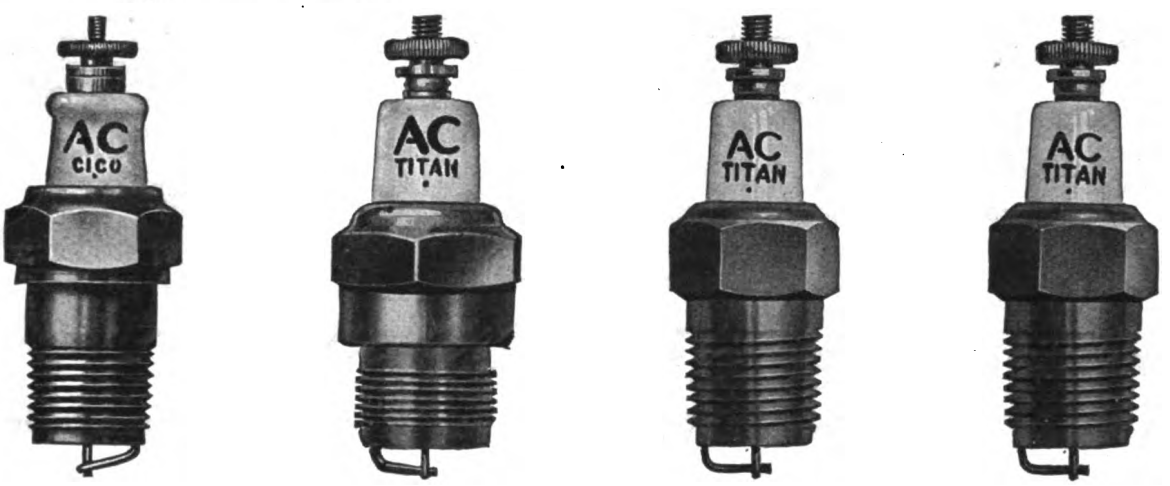
Jobber's Name.....

Address.....

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AC Spark Plugs

The Standard Spark Plug of America



Special for Ford Cars
A C CICO

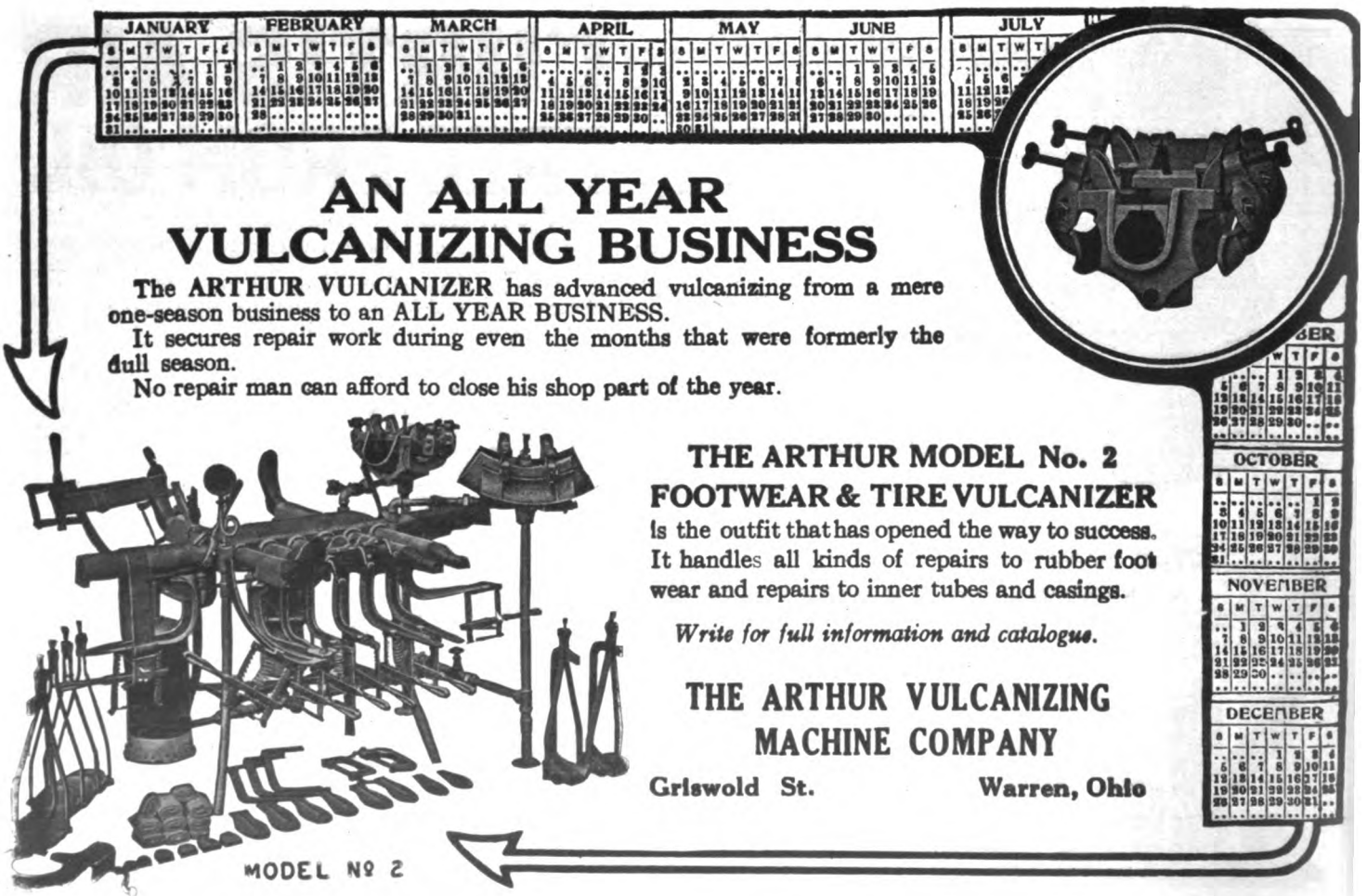
⅞" Regular
For Maxwells
A C TITAN

⅞" Regular
For Willys-Overland
A C TITAN

⅞" Regular
For Studebakers
A C TITAN

AC Plugs have proven to be the best under all conditions. That is why 80 manufacturers of Automobiles, Trucks, Tractors and Aeroplanes use them for regular equipment. The leading race drivers are using them. *Your* motor will not give its best performance unless equipped with AC. You will come to them in time. Why not buy a set *now* and note the improvement?

CHAMPION IGNITION COMPANY, Flint, Michigan, U. S. A.



AN ALL YEAR VULCANIZING BUSINESS

The ARTHUR VULCANIZER has advanced vulcanizing from a mere one-season business to an ALL YEAR BUSINESS.

It secures repair work during even the months that were formerly the dull season.

No repair man can afford to close his shop part of the year.

THE ARTHUR MODEL No. 2 FOOTWEAR & TIRE VULCANIZER

is the outfit that has opened the way to success. It handles all kinds of repairs to rubber foot wear and repairs to inner tubes and casings.

Write for full information and catalogue.

THE ARTHUR VULCANIZING MACHINE COMPANY

Griswold St. Warren, Ohio

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The New Speer Illustrated Brush Catalog

IS NOW READY FOR DISTRIBUTION

This catalog illustrates and describes every brush used on starting and lighting systems of automobiles, regardless of whether the equipment is modern or has been in use several years.

Information regarding the correct brush for each car or equipment is also given, thus making the catalog invaluable for dealers, garages and supply houses.

THE ENCYCLOPEDIA OF THE BRUSH INDUSTRY

Write today and have your name placed on the mailing list

SPEER CARBON COMPANY
ST. MARYS, PA.

The UNDERHOOD Motor Heater

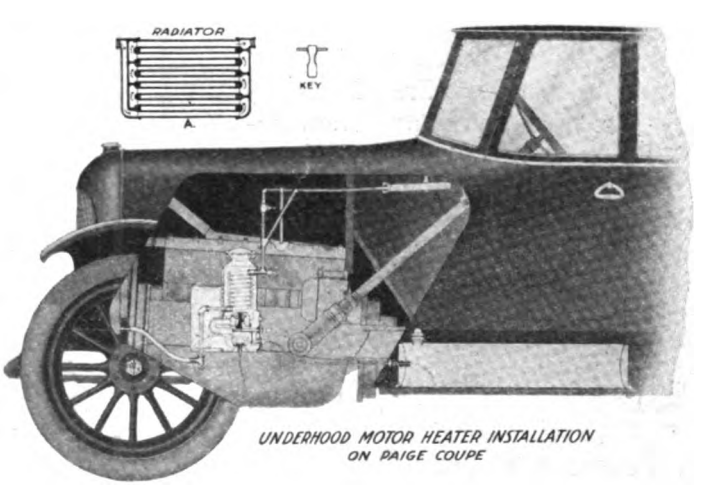
The Only Heater on the Market That Heats the Motor Continuously When the Car is Parked on the Street or Garage

Draws the water from the lowest point of the radiator, heats it to a very high temperature and then injects it into the water manifold.

No cost for operation, as the UNDERHOOD saves twenty-five per cent of the gasoline consumption.

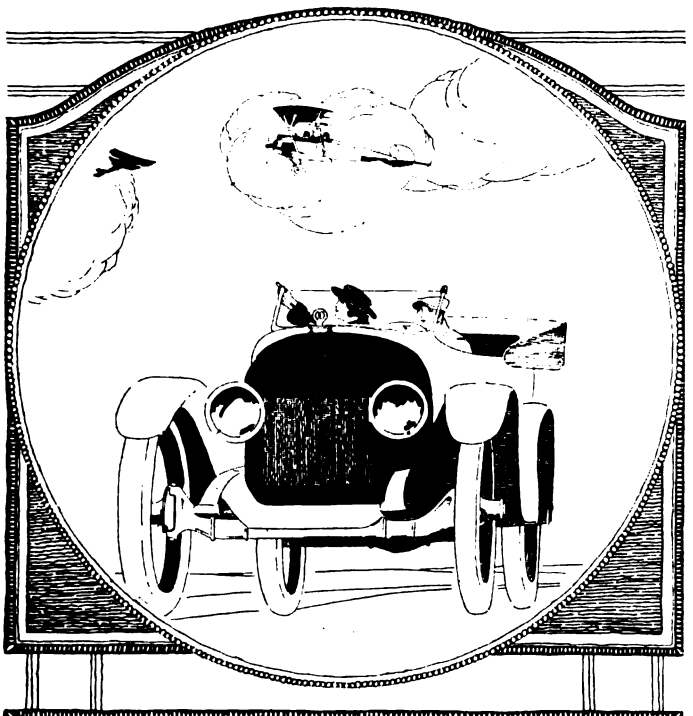
Liberal offer for State dealers. Write to-day.

Underhood Motor Heater Corporation
705 Book Bldg. - Detroit



UNDERHOOD MOTOR HEATER INSTALLATION ON PAIGE COUPE

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A FLYING START ON FREEZING DAYS

Jump In, Step On the Starter.
Feel Her Purr and Move
Off Without a Fuss.

Invincible

Radiator and Hood Covers

protect the radiator, protect the motor, make easy starting and do it all without inconvenience.

They're tailor fitted for every make and model of car. Not unsightly but neat, trim and serviceable. They fit fast and snug, have convenient radiator cover roll strap holder to raise it during driving or lower it while parking.

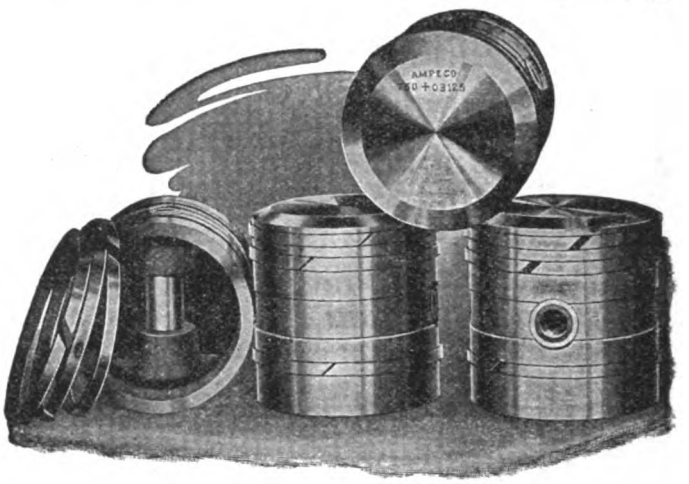
Don't chance freezing. A radiator only freezes once.

Write for complete catalog today.

The Peters & Herron Dash Co.
77 S. GIFT ST. COLUMBUS, OHIO

Fords Converted Into Trucks and Tractors Can Now Use

"AMPECO" PISTONS



For Every Ford Car In Service

Better running trucks and tractors that pay, smoother running passenger cars that skim along easily under every load, inevitably follow when you install "AMPECO" light weight, evenly balanced pistons in your Ford. Overcome main bearing troubles, give increased power and greater speed. Found always in the most efficient motors on Ford cars.

Use "AMPECO" Pistons and You Use The Best

AMERICAN MACHINE PRODUCTS CO.
MARSHALLTOWN IOWA

MORE LITE AUTO LENS

Is Giving Satisfaction

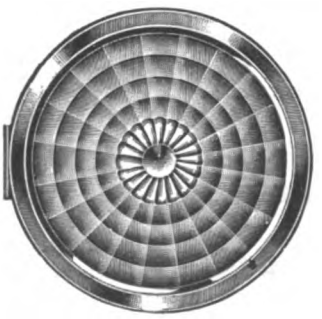
"More-Lite" Auto Lenses give satisfactory service, at a lower price than any other high grade, light diffusing lens on the market.

What more can motorists and dealers ask? They are one-piece lenses, made in either crystal or amber glass, and can be obtained in all sizes.

They comply with headlight laws of all states.

100% Efficiency—50% Cost

L. E. Smith Glass Co., Mt. Pleasant, Pa.



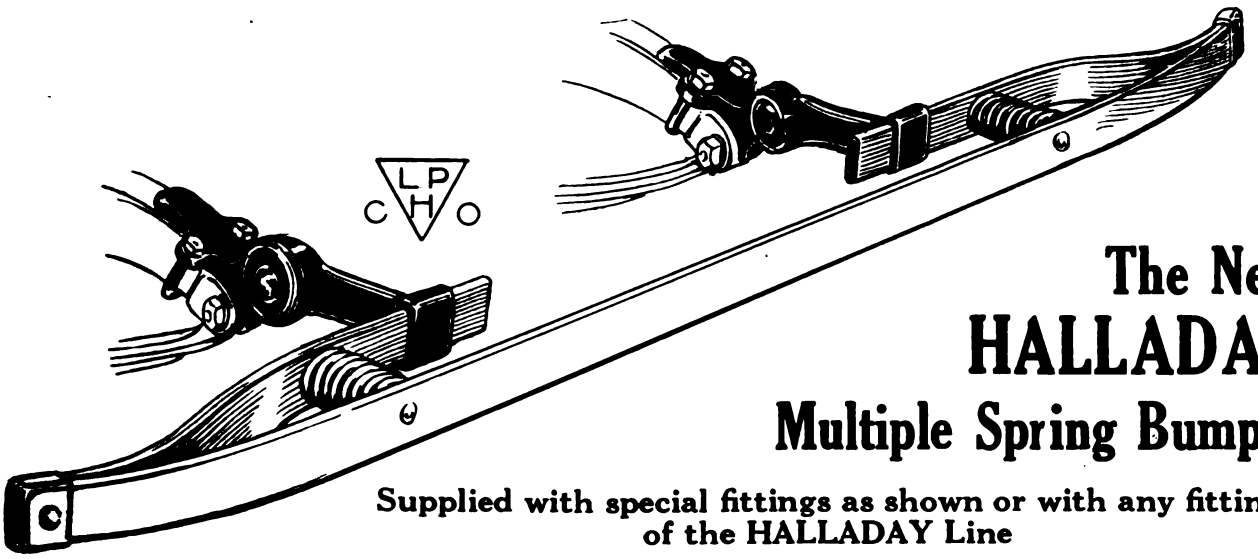
Dealers and Jobbers Write for Special Discounts

LIST PRICES

Diameter in Inches	Per Pair
6" to 8½" inclusive	$1.50
8⅝" to 9½" inclusive	1.75
9⅝" to 10¼" inclusive	2.00
10½" to 11¼" inclusive	2.25

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The High Water Mark in Bumper Efficiency



The New HALLADAY Multiple Spring Bumper

Supplied with special fittings as shown or with any fitting of the HALLADAY Line

The shock resisting qualities are derived from a combination of three steel spring bars and two heavy spiral spring buffers. The spring ends are joined by a hinge connection which eliminates breakage at this point.

Experienced dealers and car owners will quickly appreciate the enormous strength and efficiency of this bumper and the wise ones will get busy.

DISTRIBUTED THROUGH REGULAR CHANNELS

L. P. HALLADAY COMPANY, Streator, Illinois

Distributors: Asch & Co., 16-24 W. 61st Street, New York City; E. L. Thompson Co., 817 Boylston Street, Boston, Mass.; Gray-Heath Co., 1440 Michigan Avenue, Chicago, Illinois; Sanford Brothers, Chattanooga, Tenn., Southern Distributors; Hughson & Merton, Inc., San Francisco, Los Angeles, Portland and Seattle, Pacific Coast Distributors.

Take the air to the tire!

Black & Decker LECTROFLATER

Electric Air Compressor

No. 2 Automatic Portable Tank Outfit

Takes up very little space, light in weight, easy to handle, can be wheeled anywhere—yet the tank will deliver sufficient air to inflate 10 tires from 40 to 80 lbs. pressure.

When tank becomes empty, merely connect cord to any electric light socket (either A C or D C) and the Lectroflater pump, mounted above, fills the tank again in a jiffy.

An automatic pressure switch cuts off the current when the pressure in tank reaches 150 lbs. and starts the pump working again when pressure drops to 120 lbs.

Pump requires virtually no attention. All working parts enclosed under a single housing. Grease—not oil—lubricated. Requires repacking once in six months. Scientifically air-cooled. Extremely quick and powerful, yet very economical to operate. Will inflate 10 tires at a cost of one cent for current. Build for hard service. Fully guaranteed.

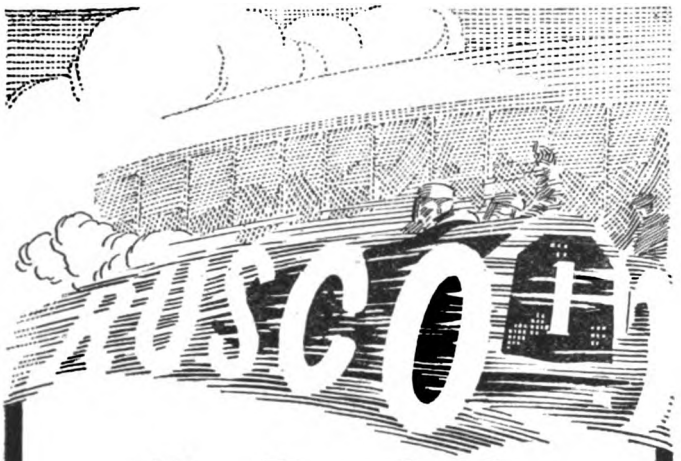
Write today for illustrated booklet "A Friendly Touch." It gives complete information about the entire line of Lectroflater Air Compressors, including curb outfits. Prices range from $50.00 up. JOBBERS—write for sales proposition.



Black & Decker Mfg. Co. 109 South Street Baltimore, Md., U. S. A.

Distributors in Canada, Northern Electric Company LIMITED Montreal

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The Remarkable Progress Of

RUSCO PRODUCTS

Every effort has been directed toward producing the largest possible output of "Rusco" products while still maintaining their characteristic high quality.

Our enormous reserve stock of raw materials permits us to choose our new stock with infinite care; our machinery, designed and built in our own shops, has been constantly improved to keep pace with every refinement in our products, and continual additions to an already immense acreage in factory space have been made regularly, in order to meet an ever-increasing demand for our output.

Behind all this extensive equipment is the high ideal which first conceived and has since jealously guarded the reputation of "Rusco" products.

Asbestos Products

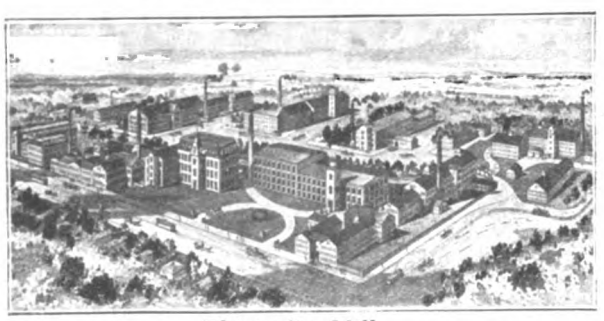
brake lining
cone clutch facing
clutch discs

Cotton Products

solid woven belting
tire and trunk straps
anti-squeak web

We are prepared to establish connections with representative dealers on a very liberal basis.

THE RUSSELL MANUFACTURING CO.
MIDDLETOWN, CONN.



Thirty-five Mills

"Break-Not" Battery Tester



All live dealers carry **"Break-Not"** Battery Testers! Are you one of the **"Break-Not"** Family? The **"Break-Not"** is recognized as one of the biggest selling Accessories today. All Supply Houses, Garages, Battery Service Stations, and Hardware Dealers are handling the **"Break-Not."**

The construction of this instrument is so far superior to every other Syringe Hydrometer now on the market, that the purchaser will have nothing else, **once he has seen the "Break-Not."**

Price complete, packed in strong mailing tube **$1.00**

Send for our circulars and catalog of interesting Accessories!

E. EDELMANN & CO.
363 E. Ohio St. **Chicago**

HIGHLAND

The best commercial body for truckmaker, dealer and user

Most of the leading truck manufacturers have been glad to avail themselves of Highland experience and skill in designing the proper bodies for their chassis.

Dealers are glad to sell them, for they help to make the truck more efficient, and a better looking job.

Write us about your delivery-body problems. We have spent 25 years in solving them.

Highland Body Manufacturing Company
1121 Elmwood Place, Cincinnati, Ohio

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For Motor Truck Upholstery

DU PONT FABRIKOID

TRUCK SPECIAL

Satisfactorily meets the scarcity-of-leather situation. Costs less than even the poorest split leather, but wears better.

Comes in 60-yard rolls 50 inches wide. Cuts in multiples without waste.

You should use it to save money.

You should use it to save leather.

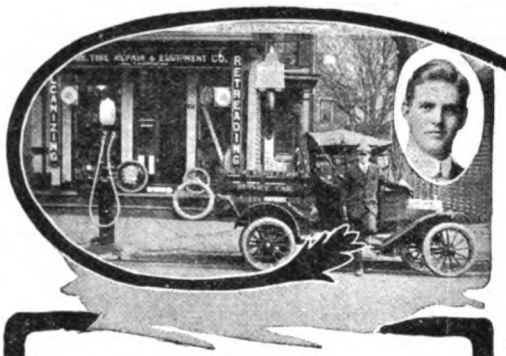
It is waterproof, washable and its fine leather appearance and "feel" leave nothing to be desired.



Write for Truck Special Booklet, Samples and Prices

Du Pont Fabrikoid Co.
Wilmington, Del.
Works at Newburgh, N. Y., and Fairfield, Conn.
Canadian Office and Factory: Toronto

World's Largest Makers of Leather Substitutes



The Haywood Shop of Paul R. Fredericks, Wallingford, Conn.

$400 a Week

"Just a year in the business and now doing $400 to $450 a week at a good round profit" tells the story of this Haywood shop. Scores of men have found their independence in the Tire Repair business, have opened Haywood shops and are making big money. The coupon below or a post card with your name and address will tell you how to start.

More Men Wanted

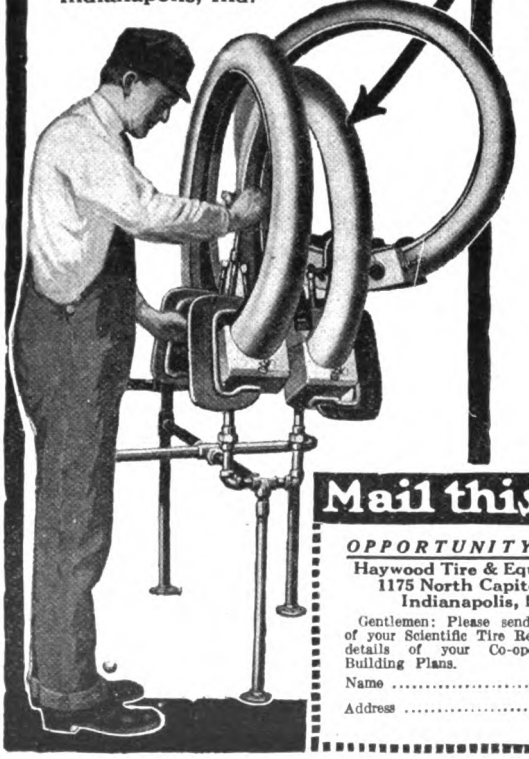
30,000,000 Tires to Repair

The demand for tire repairing is now so great that more Haywood stations must be established at once throughout the country. We want capable, energetic, ambitious men in charge of each—men who are dependable—competent. You can have this opportunity. Make $3,000 a Year or Better:

A Wonderful Opportunity

The coupon—your name and address, brings full particulars. How to start. How to tie up with the Haywood Service. We'll give inside facts and figures about costs and profits—explain in detail our Co-operative Business Building Plans. Write today without fail. Learn how you can start at once.

Haywood Tire & Equipment Co.
1175 N. Capitol Ave.
Indianapolis, Ind.



The Money Making Haywood Machine

Get the Facts

Mail this Today

OPPORTUNITY COUPON

Haywood Tire & Equipment Co.
1175 North Capitol Avenue
Indianapolis, Indiana

Gentlemen: Please send full particulars of your Scientific Tire Repair Service and details of your Co-operative Business Building Plans.

Name .....

Address .....

Air is Life!



Insufficiently inflated tires mean excessively inflated tire bills. Keeping your air pressure up means keeping your tire expense down.

Test your air pressure daily with a

Twitchell Air Gauge

and give your tires new air whenever they need it.

New Air Is Cheaper Than New Tires

At your dealer, or

The Twitchell Gauge Co.
1220 Michigan Avenue, Chicago

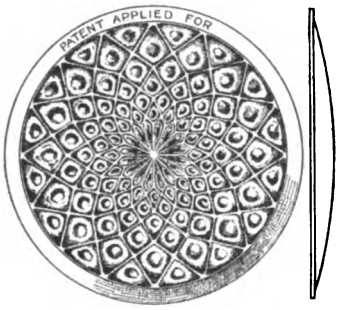
Price $1.25

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DIM-A-LITE LENS

A law-abiding, road-lighting headlight that is strong, well made and is always in focus from every direction, no matter how it may bump or vibrate.

Concave in shape, and smooth outside, it is always easily and quickly cleaned.



Always in Focus

The Dimalite Lens is made to light the road 500 feet in front, to light the sides of the road far enough on either side to show ditches, obstructions, etc. It does this *all the time*, regardless of its position in the headlight. It is "all ways" in focus—that is from any direction, in any position.

It *satisfies* the motorist. This lens has no glare; it sends its strongest beams less than 43 inches above the ground. It complies absolutely with State laws.

But it is *simply made* of strong concave crystal glass, *made* for *automobile service*.

Its price is reasonable.

PRICES:

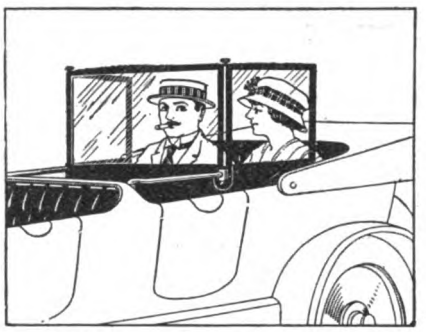
8, 8⅛, 8¼, 8⅜	$1.25 per pair
8½, 8¾, 9	1.50 per pair
9⅛, 9¼, 9½	1.75 per pair
9¾, 10, 10¼, 10½	2.00 per pair

Our dealer proposition is a real money maker. Write for it at once.

THE DIM-A-LITE LENS CO.
866 North Tenth St. PHILADELPHIA, PA.

EVERY open car owner is a prospect. The opportunity for sales is enormous.

Right now the J. H. Tonneau Shield offers the one big proposition of the hour for dealer profits. Consider its remarkable utility—



It protects the rear seat—the ladies and guests always sit there—no veils or goggles necessary: wind, dust, rain, snow—all are kept away. In conjunction with top and curtains, it provides limousine comfort. When not in use it folds down and takes no more room than a robe. Furthermore it is adjustable and may be placed close up or further forward and wherever placed remains firm and will not rattle.

J. H. Tonneau Shield

Thoroughly tried and perfected—not new. Adaptable for use on any car—it is simple, durable, dependable, handsome in appearance and easily installed. Water-proof apron at bottom keeps robes dry. Beautifully finished frame—fine quality glass.

The price is reasonable.

Don't miss this—Dealers—Write today.

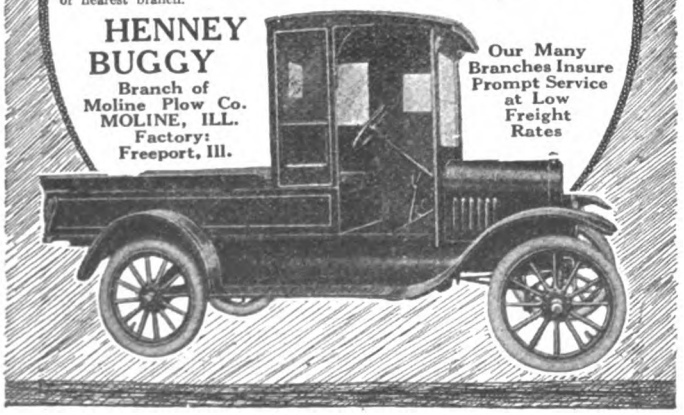
J. H. TONNEAU SHIELD COMPANY
1777 BROADWAY NEW YORK

Your Home Merchants will buy Henney Commercial Bodies for Ford Cars

The general merchant, dry goods merchant, grocer, hardware dealer, plumber, florist, farmer and dairymen will appreciate Henney Commercial Bodies.

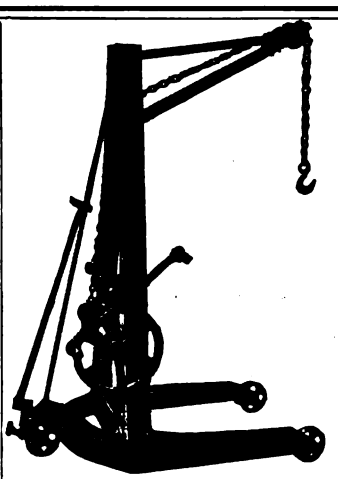
Complete line of Henney Truck Bodies for new Ford one-ton truck and for extended Ford chassis is our latest big selling offer to dealers.

Direct from factory; cash selling gives dealers competition-beating prices. Our catalog, free on request, shows full line of Henney Bodies, also Commercial Fenders, for which there is a big demand. Address Main Office or nearest branch.



HENNEY BUGGY
Branch of Moline Plow Co.
MOLINE, ILL.
Factory:
Freeport, Ill.

Our Many Branches Insure Prompt Service at Low Freight Rates



QUICKEST, SAFEST and BEST WAY to

—take out engine or transmission and transport it to any part of garage.

—lift up front end of car to work on engine, transmission, universal joints, electrical parts, replace springs, fill grease cups, or remove whole front axle.

—lift up rear end of car to remove whole rear axle, replace springs, adjust brake parts, etc.

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is always ready for instant use. And you move the crane to the car, not the car to the hoist.

It has extraordinary lift and overhang (absolutely needed in automobile work); without being in the least top heavy, as its superstructure is of light, strong steel, and its base of heavy cast iron.

Better than a traveling crane—for loads up to its capacity—as it can be moved on its own wheels to any part of the shop.

Lighter and handier than other cranes, its cantilever (bridge type) construction is the strongest known.

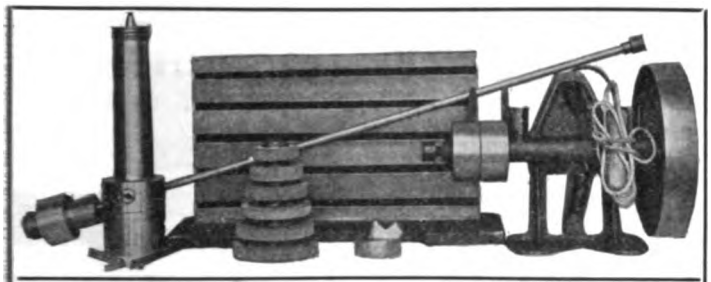
1, 1½ and 2-ton capacity with any lift up to 10 feet.

***Special Features:** Double-throw operating lever, giving twice the leverage for heavy work. Safety guard on gears. Wide wheels, low clearance, locking device.*

Prices, $64 to $82
($14 less without lifting device)

UNITED ENGINE & MFG. CO.
Hanover Pa.

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W. & B. Lathe Attachment for cylinder grinding, showing complete outfit.

Price, $210 f. o. b. San Jose, Calif.

The W. & B. Boring and Grinding Attachment

EQUIPMENT. — 1 Grinder head, drive shaft, pulley; 1 Wick-oiling countershaft, tight and loose pulleys 2x4 in., driving pulley 11x2 in.; 1 Angle plate with tee slots, size of face 12x20 in.; 6 Abrasion wheels, standard size ⅝ in. face; 6 Collets to make wheels run true when interchanged; 2 Wrenches; 1 Diamond dresser.

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EASE OF ADJUSTMENT.—For adjustment to various diameters, grinder head can be offset, thus causing wheel or cutter, as case may be, to travel in circle of greater or less radius. Screw is graduated to 1-1000 inch.

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Manufacturer and Distributor

590 South 1st Street San Jose, Calif.

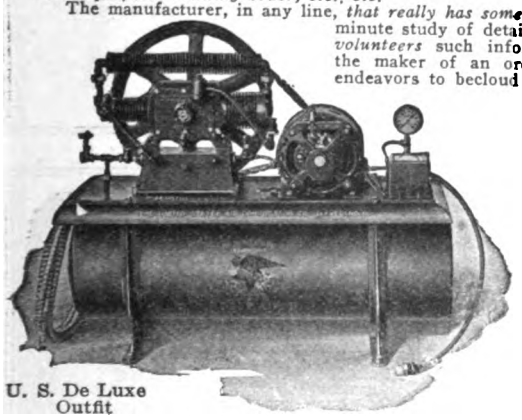
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Carnegie Ave., Cleveland

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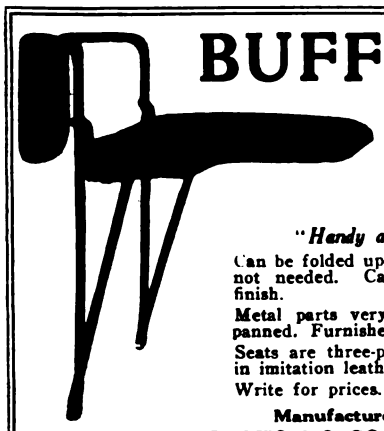
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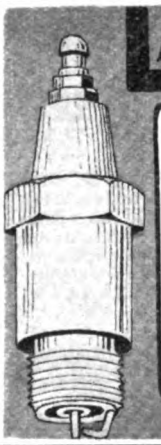
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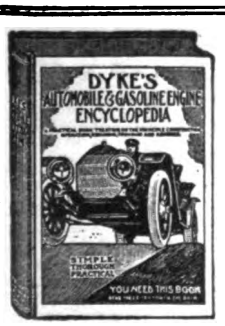


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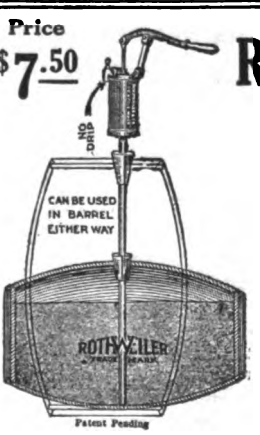
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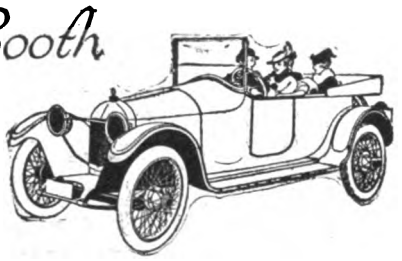
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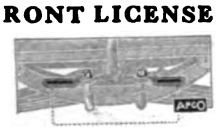
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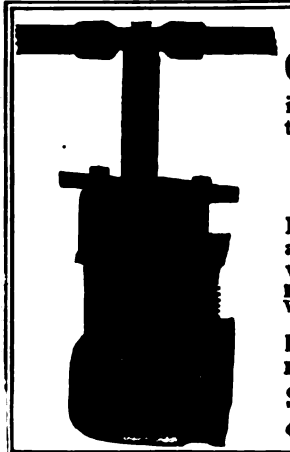
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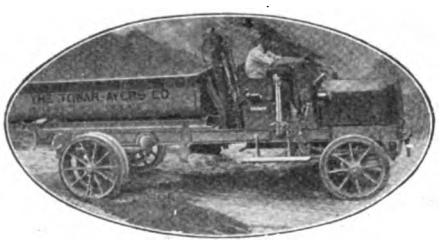
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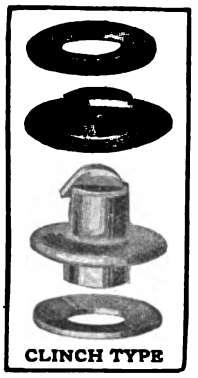
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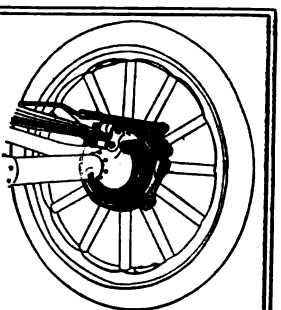
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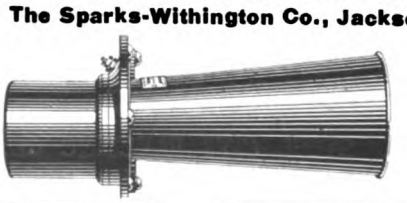


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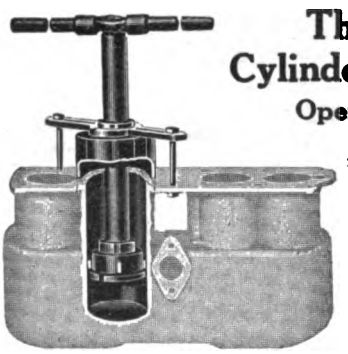
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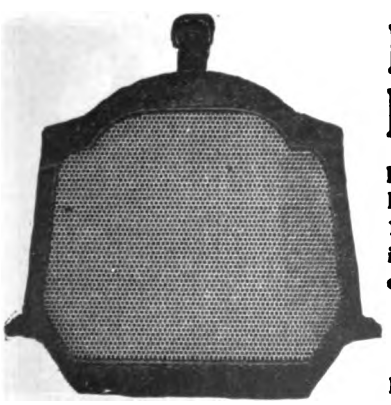
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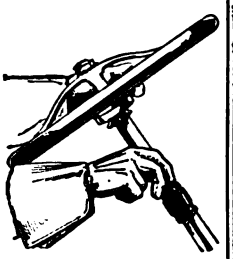
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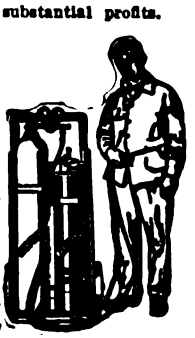
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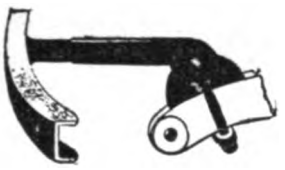
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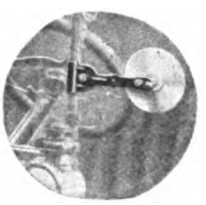
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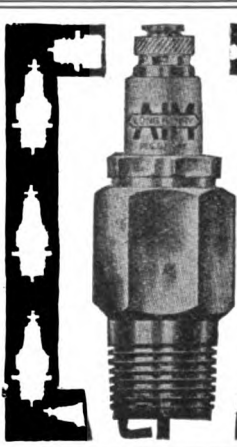
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E	2	1	12	8½
F	2¼	1¼	12	10
G	2½	1½	12	11½
H	2¾	1¾	12	12½
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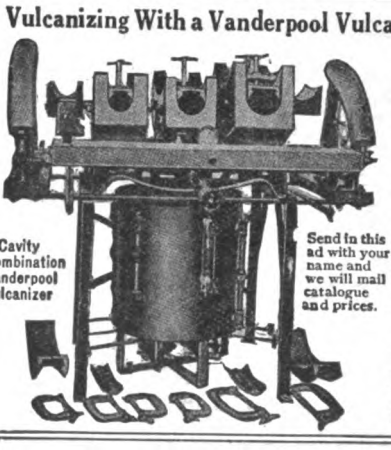


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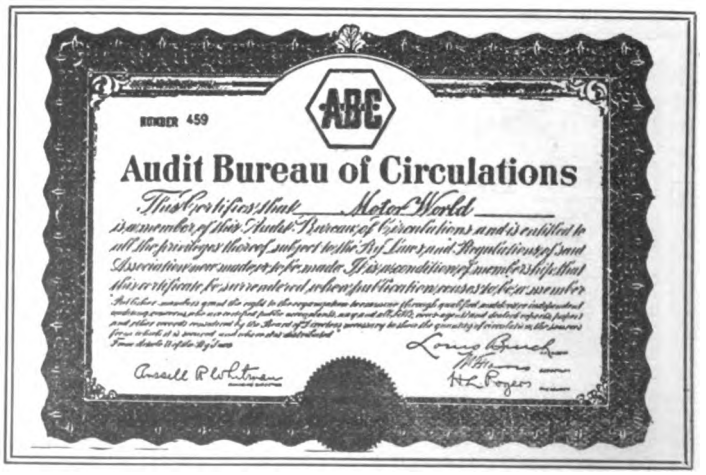
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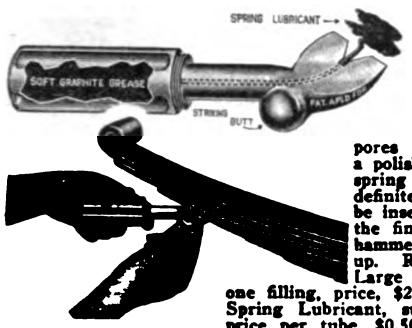
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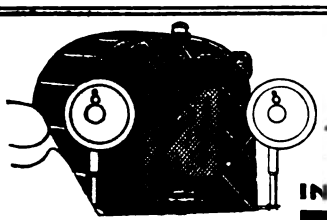
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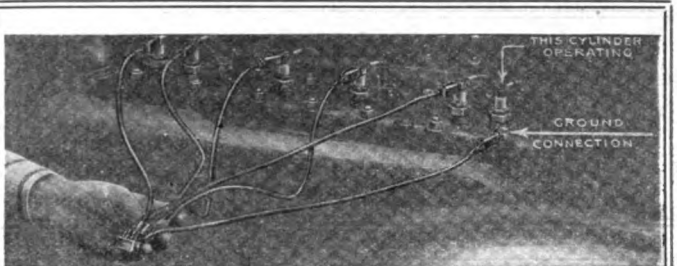
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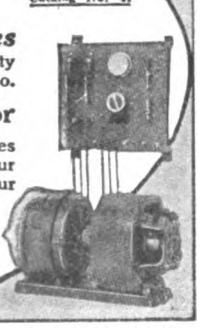
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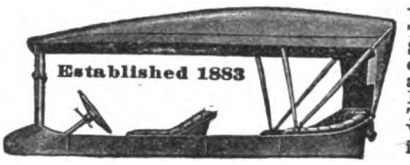
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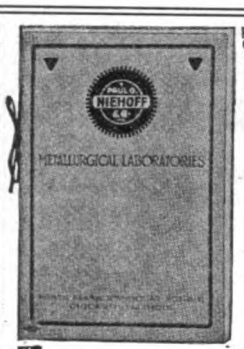
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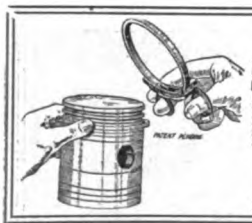
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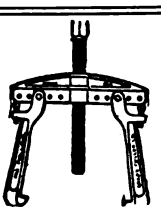
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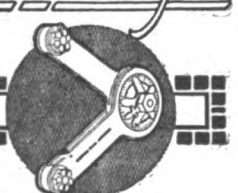
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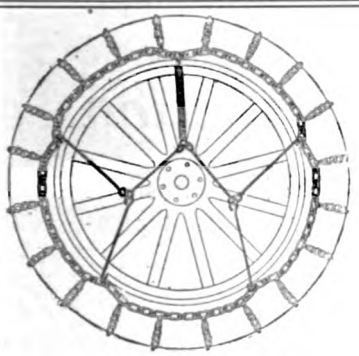
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The toughest, stretchiest non-tearable long-wearing non-leakable tubes made are the Woodworth Trouble Proof Tubes. Pure red rubber, antimony cured.

WOODWORTH TROUBLE-PROOF TUBES

DEALERS have found these tubes splendid business builders. They are practically leak proof and cross plied to prevent tearing.
Write today for good substantial proposition.

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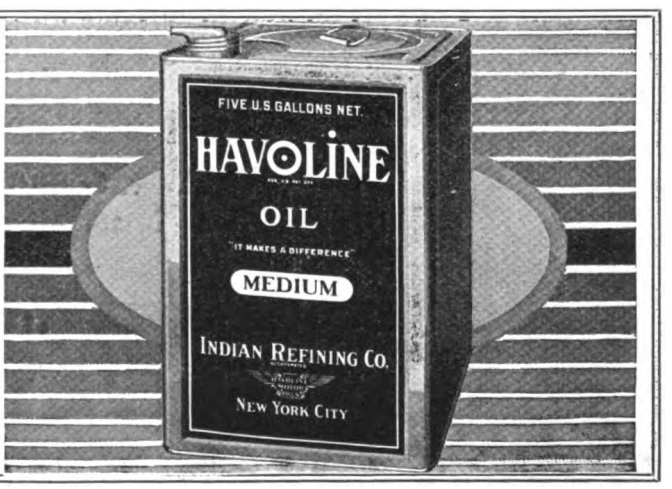


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THE CLEARING HOUSE
OF THE MOTOR INDUSTRY

For Parts, Accessories, Tires, Machinery, Rebuilding, Repairing, Welding and Used Cars. Also Help and Situations Wanted and Miscellaneous Classified Advertising

In the Matter of
Auto Parts Company, Bankrupt
Receiver's Sale

Auction *Auction*

By order of the U. S. District Court, we will, commencing at 10:30 A. M., Tuesday, November 13th, 1917, at 739 West Jackson Boulevard, Chicago, Illinois, sell at public auction all assets belonging to the estate of the

AUTO PARTS COMPANY, Bankrupt

consisting of a staple stock of Motor Accessories in large quantities and mostly in original cases, invoicing over

$300,000.00

At 10:30 A.M., the first day of the sale we will offer the Right, Title and Interest of the Receiver in the

Good Will

of the Bankrupt Concern, consisting of a half million live names pertaining to all branches of the automobile industry, the right to use the name, etc.; the Good Will of this Company is being preserved by the Receiver, and all orders being filled by special arrangement with the creditors. The Auto Parts Company was a wholesale and retail Cash Supply House, doing a business of $300,000 yearly.

At 10:30 A.M. Thursday, November 15th, we will sell the entire Office Equipment.

The assets will be sold in suitable lots to the highest bidder for cash.

Cheques must be certified. A deposit of 25% required from each purchaser.

Circulars containing full particulars can be had by request of undersigned auctioneer's office.

Frank M. McKey, Receiver.
Messrs. Moses, Rosenthal & Kennedy, Attys. for Receiver.

SAMUEL L. WINTERNITZ & COMPANY, Auctioneers
Room 506, Rector Building, 79 W. Monroe St., Chicago, Illinois

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SERVICE!!!

Our Stock Covers

AXLES (Front and rear).

BEARINGS (Annular, Taper, Thrust).

BUSHINGS (Brass and Bronze).

CLUTCHES (Cone and Disc).

CAPS (Hub and Radiator).

CONES (Fan and Wheel).

COUPLINGS (Magneto and Clutch).

DRUMS (Brake and Rear Wheel).

DISCS (Clutch).

ENGINES (Auto and Marine).

FANS (Motor).

FLYWHEELS (Engine).

GEARS (Trans., Diff., etc.).

HOUSINGS (Diff. and Clutch).

JOINTS (Propeller Shaft and Generator).

KNUCKLES (Front Axle).

PISTONS (All sizes).

PUMPS (All kinds).

RINGS (Piston).

All material maintained in our stock is absolutely brand new. "We do not handle any second hand Junk."

Bulletin No. 37

Jos. C. Gorey & Co.
352 West 50th Street
New York City

Parts and Repairs.

HERE YOU SAVE 50% to 75%

ON REPAIR PARTS

Our immense volume makes this saving possible. Only the Best Parts offered backed by our iron clad GUARANTEE of "Complete Satisfaction or Money Cheerfully Refunded." Save this list for future reference. Many excellent BARGAINS.

GUARANTEED MOTORS

Regal 30	$30.00	Overland 69	$75.00
Flanders 20	50.00	Overland 71	75.00
E. M. F. 30	50.00	Overland 79	75.00
Rambler Model 64	50.00	Overland 83	75.00
Partin-Palmer	50.00	Case 1911	75.00
Maxwell 25	60.00	Stearns 1911	75.00
Cadillac 09-10	60.00	Moon 1912	75.00
Cadillac 1912	75.00	Velie 40, 1912	85.00
Henderson 4 cyl.	75.00	Buick 17	90.00
Speedwell 40 hp.	75.00	Mitchell 6-60	100.00
Chalmers 6, 1915	100.00	Packard 18	125.00
Drummond 8, 1917	300.00	Packard 30	150.00

Velie 4 cyl., 1915, starter and generator	$150.00
Apperson 6-48, Mea mag., starter, generator	175.00
Apperson 8 cyl., starter	200.00
Jackson 35, Unit Plant	75.00
Chalmers Mod. 10, Unit Plant	125.00
Menominee Truck, Unit Plant	100.00
Buick 31—Unit Plant	125.00
King 1914, Unit Plant	125.00
Cadillac 8 cyl., Unit Plant	300.00

ALL MOTORS GUARANTEED IN EXCELLENT CONDITION

Rear Axles	$15.00	$75.00
Transmissions	25.00	50.00
Front Axles	5.00	10.00
Carburetors	3.00	15.00
Radiators	10.00	25.00
Springs	1.50	2.50
Spring Leaves	.25	.50
Bearings, any make	.50	5.00
Ward & Leonard Generators	....	15.00
Gray & Davis Generator with cut out	....	20.00
Splitdorf Mag. & Coil	....	10.00
Remy Mag. & Coil	....	10.00
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Eisemann H. T.	....	35.00
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Remy Coils	5.00	7.50
Bosch Coils	....	7.50
Windshields	6.00	10.00
Electric Head Lamps, Pair	....	5.00
Gas Head Lamps, Pair	....	4.00
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Electric Side Lamp, Pair	....	3.00
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Round Gas Tank, 12x35, for Vacuum	....	6.00
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Tube Vulcanizer	....	.50
Foot Pumps	1.50	2.50
Spark Plugs	.25	.50
Reliners 30x3—30x3½	....	.75
Reliners 32x3½—32x4	....	1.00
Reliners 33x4 and larger	....	1.50
Blow out patches inside	....	.20
Blow out patches outside	....	.35

Instant Service! Write, Wire, or Phone—

Auto Wrecking Co.

"We Tear 'Em up and Sell the Pieces"

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To All Owners of MAXWELL-BRISCOE STODDARD-DAYTON EVERITT

Maxwell 6-50
Maxwell 4-35
Flanders "Six"
Brush
Courier-Car
Columbia
Courier Clermont
Sampson "35" Motor Cars
Alden-Sampson Trucks

The Maxwell Company has transferred to the Standard Motor Parts Company the entire Service Department on all of the models above listed, and all orders for repair parts should be placed direct with the Standard Motor Parts Company New Castle, Indiana.

Better Service will be given these owners than ever before, and many reductions in repair parts prices have been effected.

ADDRESS ALL ORDERS AND INQUIRIES DIRECT TO THE

Standard Motor Parts Co.
New Castle Indiana

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We do not wreck cars.
GEARS—AXLE SHAFTS—REAR AXLE PARTS—TRANSMISSION PARTS—MOTOR PARTS—ALL NEW.

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Beautiful streamline—Touring and Roadster—Can be made to fit
FORDS—CHEVROLET—HUDSON 20—R. C. H.—OVERLAND and other light cars.

ROADSTER	$30.00
TOURING	35.00

(Crating $5.00 extra.)

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18 in. steering wheels for Fords	$3.50 up
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BUICK—OVERLAND—CADILLAC—OAKLAND—KING—HUPP—DODGE—STUDEBAKER—HUDSON—CHALMERS—And many others at a big bargain.
FORD—honeycomb ..... $19.50 up
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Let Our Prices Save You Money

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1912 Regal—4 and 6 Cylinder Everett, 1910 Chalmers, 1911 Peerless, 1912 Studebaker, 1910 Cadillac, 1914 Reo, 1915 Maxwell and Model L. D. 10 Kissel Kar, also parts for over 30 other makes. Bosch, Eisemann, Remy, Splitdorf and other magnetos from $5.00 up.

All our goods guaranteed.

New York School of Motoring
Utica, N. Y.

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Buy your parts for all models of Pope Hartford cars from the only legitimate and authorized manufacturers—who own the original drawings, patterns, tools and fixtures and are making these parts daily. Don't buy and use second hand parts. They may be the cause of serious accidents and result in much additional expense in the long run.

The Hartford Motor Car Co.
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An Opportunity for Quick Action

We announce one of the most important sales of new and rebuilt auto bodies that we have ever inaugurated. Every type of body is included and the list includes many fine examples of the coach builder's art at the lowest prices ever quoted.

Touring Bodies, Race-abouts, Coupes, Roadsters, Limousines, Landaulets and Sedans.

Prices as low as $5.00. Values that mean big savings.

If you will call we will be pleased to show you the full line and quote you prices.

Let Us Know Your Requirements We can save you money.

Large stock of windshields, racing seats and tanks. Photos and full descriptions by mail.

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1763 Broadway Telephone 2176 Circle New York City, N. Y.

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AUTO PARTS CO.
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FOR STANDARD MAKES AND ORPHAN CARS. We have Wheels, Axles, Gears, Bearings, Cylinders, Pistons, Crankshafts, Camshafts, Crank Cases, Transmissions, Hubs, and other parts.

COMPLETE REAR AXLES—$20 to $65
PRESTO TANKS, SIZE "B"—FILLED—$8

WE HAVE PARTS FOR MOST ALL STANDARD MAKES OF CARS. WRITE US FOR YOUR NEEDS

E M F 30—Krit
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Maxwell Mascot
Parry—Rambler
Cole—30-40
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Glide—Stoddard-Dayton
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Are the Best
50% to 75% off Manufacturers' List Price

Our stock consists of motors, transmission, axles, crank shafts, crank cases, cylinders, camshafts, transmission cases, etc. Below is a partial list of cars for which we can supply all parts:

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Chalmers 30—F. K. M. 36-40—Master Six
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Stoddard-Dayton
Cole, 4-50-1913; 6-1913; 30-1912; 40-1914
Marmon, 1909 to 1912
National 4, 1910 to 1913
Franklin, 1905 to 1911
Hupp, 20 & K
King, 1911-'12-'13
Paige, 25-36—Empire 25
Standard 6—Metz
Stevens-Duryea
Midland-Wayne-Welch
Selden-Speedwell
Stearns, 30 to 60
Kissel 4-6
Matheson 4-6
Amplex, all models
Pope Toledo—Winton 6
Oakland 30 & 40
Pope Hartford
Reo, 1908 to 1913
Attabury
Alco
Glide-Warren
Locomobile-Knox
Interstate—Jackson
Abbott Detroit
Courier-Glide
Buick, 10-17-19-30
Moon 30-40-45 & C
Maxwell, all models to 13
Packard, 1905 to 1912
Pierce-Arrow, '07-'12
Hudson, 20, 33, 37, 6-54
Ohio-Regal
Bergdoll-Staver
Allen, '15 and '16
Atlas-Speedwell
Mitchell, 1908 to 1914
Thomas, all models
Great Western—R. C. H.
Oldsmobile Special
Limited-Autocrat-Defender 42 and 43
American Underslung 30 to 50—Scout
Case 40—Halliday
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Commercial Truck
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Gears. For any make car, 50 per cent off list.
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We supply you with them. Write today.

Connecticut Ignition Systems complete	$8.88
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NEW 1916-1917 MAXWELL WINDSHIELDS CRATED	5.50

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Any make. All these magnetos will give satisfaction.
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Transmission and Differential Gears for any make of car at **10% TO 25% LESS** than manufacturers' list price. Special proposition to recognized dealers and garagemen. Write for price.

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New parts for Crescent and Ohio cars carried in stock. Our repair shop is large and complete. Overhauling a specialty. All work guaranteed.

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OVER 100 CARS—STOCKED

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Packard 30, 1908 to 1912; Pierce, 4 and 6 cyl.; Cadillac, 1909 to 1914; Buick, Chalmers, Stoddard, Peerless and many others; Bosch magnetos; all types of slightly used magnetos at your price, guarantee them right; Gray & Davis starting and lighting motors, batteries, coils and carburetors. The Sunderman carburetors, brand new at $5. Your money's worth or your money back.

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MARION SERVICE DEPARTMENT

made from original Marion patterns and records which no one else can use; special prices. Prompt, expert service. No agents nor branches.

MARION MOTOR SERVICE COMPANY

Indianapolis, Ind.

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CYLINDER HEADS FOR FORDS

16 Overhead Valves, Rocker Arms, Push Rods. Special Intake Manifold for 1¼-in. Carburetor. Complete assembled **$85.00 f.o.b. Anderson, Indiana.**

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Well made.
Write for our list to-day.
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Sole agents for the U. S. of
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A mechanical device of unlimited possibilities.
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Metz $45, Flanders $40, Mitchell $50, Buick 17 $75, Everett 30 $45, Buick 24 $75, Buick 10 $50, Buick 19 $65, Staver $65. Other motors low price.
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West End Pittsburgh, Pa.

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4,000-MILE WRITTEN GUARANTEE WITH EVERY TIRE
Adjustments made on mileage basis of 30 miles to 60 miles per day, depending on size of tire.

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Tires	Non-Skid	Tubes	Tires	Non-Skid	Tubes
28x3	$ 7.25	$1.80	34x4	$16.55	$3.20
30x3	7.60	1.90	36x4	17.65	3.35
30x3½	9.85	2.15	34x4½	20.75	4.00
32x3½	11.55	2.25	35x4½	22.75	4.10
31x4	14.35	2.95	36x4½	23.75	4.15
32x4	14.75	3.05	35x5	27.20	4.95
33x4	15.75	3.10	37x5	27.60	5.05

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A great many men will read this page. If you can qualify for one of these exclusive territories don't delay in writing us at once, giving full information about the territory, etc., you want.

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Any order you care to send us will be cheerfully accepted and handled with all the enthusiasm that is accorded the many large stock orders that come every day. It will pay you to order in large quantities on account of the saving to you in express charges.
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5000 MILE SECONDS

at the following prices without a guarantee. However, if you want a GUARANTEE FOR 3,500 MILES, add 20 per cent on these prices.

BEST VALUES ON THE MARKET—A Trial Order Will Convince You

Size	Plain	Tubes	Size	Plain	Tubes	Size	Plain	Tubes
28x3	$7.00	$2.00	32x4	$14.00	$3.35	35x4½	$21.45	$4.20
30x3	7.00	2.00	33x4	14.50	3.50	36x4½	22.00	4.30
30x3½	8.75	2.30	34x4	15.00	3.65	37x4½	22.80	4.60
32x3½	10.50	2.45	35x4	15.85	3.75	35x5	23.10	4.65
34x3½	11.50	2.70	36x4	16.20	3.85	36x5	23.95	4.75
31x4	13.75	3.20	34x4½	20.35	4.15	37x5	24.20	4.95

Add 10% to the above prices for non-skid tires

Order today—$1 deposit required. Tires shipped by return express subject to examination. Specify whether Q. D., Clincher or Straight Side Rim.

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NEW TIRES AND TUBES ALL FRESH STOCK STANDARD MAKES
Slightly Mould Blemished.

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28 x 3	$6.90	$1.75	32 x 4	13.65	2.80	35 x 4½	20.90	3.35
30 x 3	6.75	1.80	33 x 4	14.25	3.00	36 x 4½	21.40	3.40
30 x 3½	8.75	2.00	34 x 4	14.60	3.00	37 x 5	24.00	4.30
32 x 3½	10.25	2.25	36 x 4	15.90	3.10	Add 10 per cent for Non-Skid.		
31 x 4	13.40	2.75	34 x 4½	19.60	3.30			

5 per cent additional discount on orders of 12 tires or more. Upon receipt of 10 per cent of the amount of your order goods will be shipped, balance C. O. D. subject to examination.

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32x3½	11.50	35x4	16.00
33x4	14.50	36x4	17.50

Add 10 per cent extra for non-skids.
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GUARANTEED 3500 MILES

30x3	$9.87	33x4	$20.89
30x3½	12.77	34x4	21.45
32x3½	14.98	35x4½	31.17

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31x3½	10.75	32x4	14.75	35x4½	23.75
33x4	15.25	37x4½	26.00		

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30x3	$8.75	$8.75	$2.50
30x3½	8.75	10.75	2.50
32x3½	10.50	11.75	2.90
34x3½	12.75	13.50	3.00
31x4	13.75	15.25	3.25
32x4	14.25	15.75	3.75
33x4	14.75	16.00	3.40
34x4	15.50	16.50	3.60
35x4	15.75	17.00	3.75
36x4	16.50	18.00	4.00
34x4½	21.00	24.00	4.50
35x4½	21.50	25.00	4.50
36x4½	21.75	24.00	4.75
35x5	23.00	25.00	5.00
36x5	23.50	26.50	5.50
37x5	25.00	26.75	5.75

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30 x 3½	3.95	34 x 4½	8.00
32 x 3½	5.00	35 x 4½	8.00
34 x 3½	6.00	36 x 4½	8.00
31 x 4	5.00	37 x 4½	8.50
32 x 4	5.50	35 x 5	9.00
33 x 4	6.50	36 x 5	9.00
34 x 4	6.00	37 x 5	9.00
35 x 4	7.00	38 x 5½	12.50

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Jacob A. Wolf, Attorney for Trustee,
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No. 1 Wilmarth & Marmon Universal, BRAND NEW.
Three No. 190 Wells BRAND NEW cutter and reamer grinders.
Two No. 3 Modern Universal, BRAND NEW.

We own and can make delivery immediately from our New York Warehouse of the above list of machines
Send us list of your surplus used machinery. Send for Catalogue

MODERN MACHINERY EXCHANGE 52-54 Walker Street, New York City

Electric Motors — Air Compressors and Tanks — NEW AND USED

MOTORS—SINGLE-PHASE, 60-CYCLE, 110-220-VOLT

No.	H.P.	Make	Type		R.p.m.
2	1	Wagner	BA	Used	1200
1	1	Westg.	AB	New	1750
1	1½	Kimble	Var.Sp.	Used	100-2000
1	2	Wagner	BA	Used	1800
1	3	Century	REP	New	1800
1	5	Wagner	BA	Used	1750

MOTORS—2-PHASE, 60-CYCLE, 220-440 VOLTS

1	1	Westg.	CSA	New	1800
2	2	G.E.	K	Used	1200

MOTORS—3-PHASE, 60-CYCLE, 220-440 VOLTS

6	1	Allis-Ch.	AN	New	1800
1	1	G.E.	K	Used	600-1800
3	2	Westg.	CSA	New	1800
1	2	Westg.	CS	New	900
4	3	Westg.	CS	New	1800
1	3	Westg.	CS	New	900
6	3	Allis-Ch.	AN	New	1800
4	5	Westg.	CS	New	1200
2	5	Howell	SC	New	1200
3	7½	Westg.	CS	New	1800
3	7½	W.E.	KT	New	1200
6	7½	Westg.	CS	New	1800
2	10	Howell	SC	New	1200
1	10	Allis-Ch.	AN	New	720
1	15	Allis-Ch.	AN	New	600
1	15	G.E.	K	Used	1800
2	15	Allis-Ch.	ANY	New	900
1	20	Westg.	CS	New	1200
2	20	W.E.	KT	New	900
3	20	W.E.	KT	New	1200

MOTORS—DIRECT CURRENT—220-VOLT

1	2	G.E., G.E. grinder		Used	1650
1	2	Richmond	SH	Used	1600
1	3½	G.E.	CE	Used	800
1	5	G.E.	SH	Used	1650
1	7½	Richmond	RE	Used	1500
1	7½	Eddy	SH	Used	1000
1	10	Westg.	M	Used	1250
1	15	C.W.	CM	Used	800
1	15	C.W.	SH	Used	725
1	20	Ft. Wayne	B	Used	830
1	25	Westg.	4ec. hoist	Used	750

AIR COMPRESSORS
New—Belted Types

No.	Size	Class	Capacity, Cu. Ft.	Pressure, Lb.Max.
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6	4x4	Vertical	7 to 14	150
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2	6x6	Vertical	26 to 30	200
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1	7x6	A.E.	80	100

We also carry Standard Air Tanks in stock.

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NEW & SECOND HAND
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SAXER-CREIDER MACHINERY CO.
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Machinery Machinery Machinery

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Classified Department
Motor World

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Advertisers in This Section Have Facilities at Their Disposal to Take on Additional Work on Contracts. Automobile Specialties of All Kinds Manufactured on Contract Basis. Special Machinery, Press Work, Auto Machine Work, Foundry Work, Automatic Screw Machine Work.

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The original plant of the Republic Brass & Bronze Co. has been enlarged and improved to take care of five to six million pounds annually. Under new management and ample resources, this foundry is now in shape to take care of your work promptly. Expert attention in the above-named metals and alloys of all kinds is given for special work.

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Models and Experimental Work.
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Small Turret Lathe Work.
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MOTOR WORLD
CONTRACT WORK DEPARTMENT
239 West 39th St., New York

SCREW MACHINE WORK

PROMPT DELIVERY
MURCOTT & COMPANY, Inc.
253 Broadway New York City

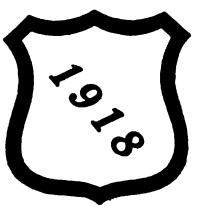
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METAL STAMPING AND PUNCH PRESS WORK
STANDARD METAL MFG. CO.
Chestnut, Jefferson & Malvern Sts.
Newark, N. J.

If your manufacturing requirements cannot be handled by firms now advertising, we should appreciate the opportunity of locating a firm that can render such special service as your business may demand. Our investigation of the contract situation as it now stands places us in a position in which we can be of valuable service to the manufacturers of the automobile industry. If interested, please communicate with the Contract Work Department, Motor World, 239 West 39th St., New York City.

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The Shield of Quality Merchandise



Coupled with the actuating slogan of our sales policy

"FOR THE GOOD OF THE TRADE"

brings us to our EIGHTH YEAR of activities as Manufacturers, Distributors and Territorial Sales Agents of

Standard Accessories

We Own, Make and Market
"FAWSCO" BRANDS

Auto Crawlers
Ignition Wiring Assemblies
Lamp Electrifiers
Oil Cock Wrenches
Lennon Light Protectors
Red Seal Spark Plugs

We Distribute

American-Standard Ignition Cable
Connecticut Switches
C-S Electric Specialties
Eureka Valve Grinding Compound
Fitzgerald Mfg. Co., Gaskets, Etc.
Ideal Hose Clamps
Sootless Spark Plugs
Tungsol Auto Lamp Bulbs
Walden-Worcester Wrenches

J. H. FAW, Inc.
Specialists in Automobile Accessories
41 Warren St., New York
Branch: Atlanta, Ga.

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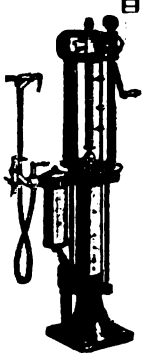
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Zenith Carburetor Co.....119

Healthy Oil *and* Gasoline



Did you ever try to operate a car, using "limp" gasoline and sluggish lubricating oil? Not much pleasure, is it? You can always avoid this—and always be sure of getting pure, filtered gasoline, full-powered and full-bodied lubricating oil—by purchasing from the dealer who stores and handles his supply with



BOWSER

Oil *and* Gasoline Storage Systems

Bowser Systems are built for the private garage, too. With a Bowser at home you can keep your gasoline and oil supply where it is always ready for instant use, day or night.

No danger of fire or explosion. It is tamper-proof; children and those not authorized cannot operate pump or draw gasoline in any way.

Write for interesting literature.

S. F. BOWSER & CO., Inc.

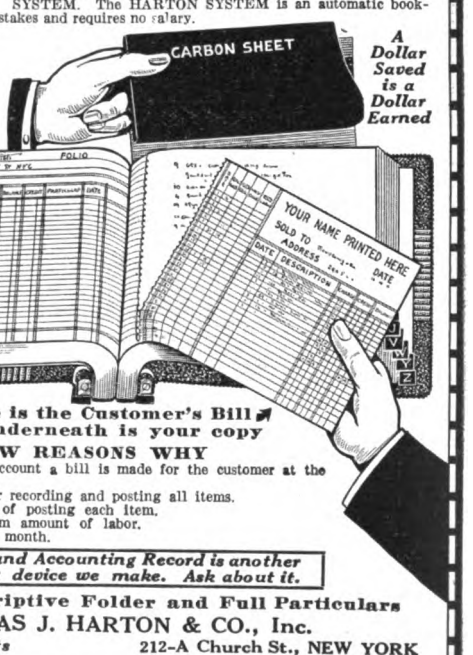
Sales Offices in All Centers **FT. WAYNE, IND., U. S. A.** Representatives Everywhere

I Save Money Every Day with → HARTON ← LOOSE LEAF GARAGE PLAN



GARAGE OWNERS You are losing money every day if you have not installed the HARTON LOOSE LEAF GARAGE SYSTEM. The HARTON SYSTEM is an automatic bookkeeper that cannot make mistakes and requires no salary.

The HARTON SYSTEM turns losses into profits. Garage keepers write us telling how accurate and helpful this proven System is.



A Dollar Saved is a Dollar Earned

This Page is the Customer's Bill the one underneath is your copy

A FEW REASONS WHY

1—When you enter an account a bill is made for the customer at the same time.
2—Simplified method for recording and posting all items.
3—Avoids the necessity of posting each Item.
4—Requires the minimum amount of labor.
5—Pays for itself in a month.

Harton's Garage and Accounting Record is another new labor saving device we make. Ask about it.

Send for Descriptive Folder and Full Particulars

THOMAS J. HARTON & CO., Inc.

Loose Leaf Specialists 212-A Church St., NEW YORK

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NAILING A LIE—COLD!!

We have read letters from Chalmers Distributors in which they have stated that competitors were saying to present owners of Chalmers cars and to prospective buyers, generally, that the manufacture of Chalmers cars would be discontinued.

There are thirty (30) automobile companies recognized by the general trade that manufacture and sell Touring Cars, and Roadsters at retail prices between $1,100. and $1,500. We haven't heard that all of these companies or any one of them were going to discontinue production or quit business. Why then should the Chalmers, with a better car than many others in this class of 30 manufacturers, stop production?

WE Make a prophecy, and will authorize our Distributors to back it up with $200,000. of our money; that, the Chalmers Company under the Maxwell Management, will stand ahead of 15 of these companies in production in 1918, and the Chalmers Company will stand ahead of 20 of these companies in production in 1919. This doesn't look as though we expected to discontinue making Chalmers cars.

The reason some people are trying to disturb the present Chalmers owners is to scare them about service so as to get a better "trade in" on his Chalmers.

The reason for circulating such a story generally would be to prevent the prospective purchaser from inspecting a Chalmers car, because if a prospective buyer of an automobile will look at and ride in the present Chalmers models he will be very apt to buy one. It is the best car selling at $1365 that we know of.

This is one reason why Chalmers cars will continue to be made, not only in 1918, but in 1919, 1920 and other years.

Another reason is that the Maxwell organization has told the general public that Chalmers cars would be produced in larger quantities than ever before and we have a way of making good with the public on sales and production.

Walter E. Flanders

President, Chalmers & Maxwell Motor Companies.

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The Only Brake Lining
Which Improves
With Use

STANWAL
BRAKE LINING
AND CLUTCH FACINGS

The treatment used in procuring the frictional quality of Stanwal is such that the heat-resisting quality increases as the frictional pressure is applied.

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Multibestos Brake Lining and Clutch Facing
Stanwal Friction and Insulating Tapes
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STANDARD WOVEN FABRIC CO., WALPOLE, MASS.

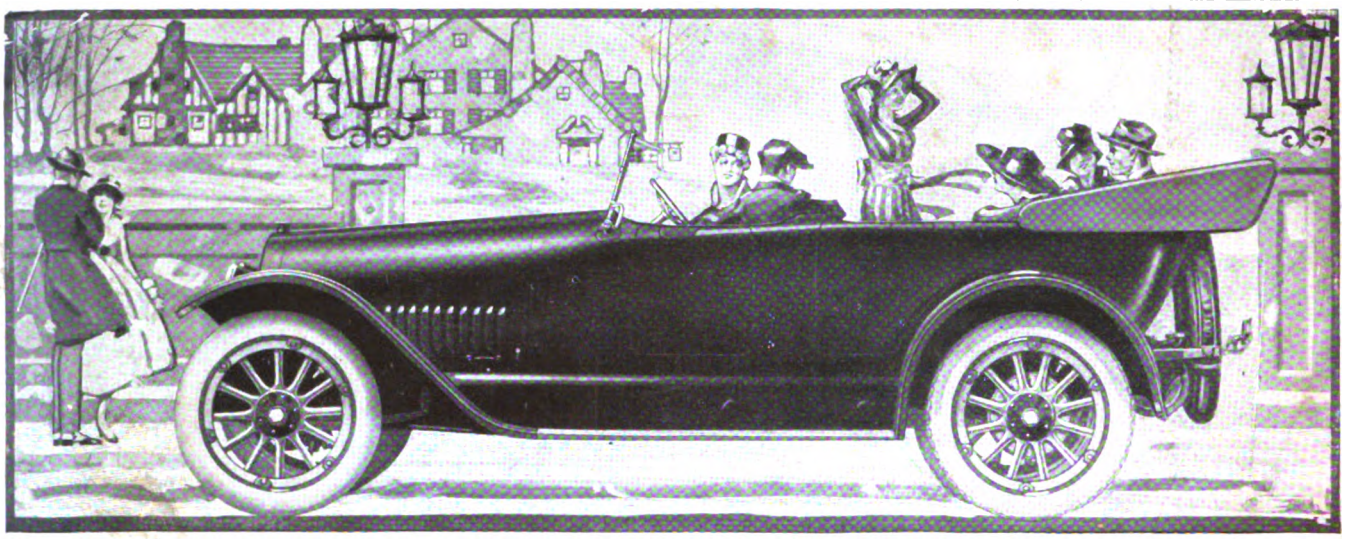
New York Branch and Export Office, 1834 Broadway

Detroit Branch Office
306 New Telegraph Building

Chicago Branch Office
1430 Michigan Avenue

Philadelphia Branch Office
406 Colonial Trust Co. Building

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One Costly Idea
Made Them Lifetime Cars

One of the greatest steps ever taken in car building was taken by Mitchell three years ago.

We adopted the standard of 100 per cent over-strength. That meant to double our margins of safety. It meant oversize parts. It meant more costly steel, and much added expense.

But it also meant a lifetime car. It meant doubled endurance. And it meant minimized repairs.

The result is a car which has proved its ability to run 200,000 miles. That is 40 years of ordinary service. And repair cost has been lessened.

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Other Additions

We have also made Mitchell the most complete cars. They have 31 features which nearly all cars omit.

We have made them the handsomest cars. In the past year alone we have added 25 per cent to the cost of luxury and beauty.

Yet Mitchell prices, on either size, are below other like-size cars.

The whole reason lies in a wonderful factory. It was built and equipped by our famous efficiency expert. Its up-to-date methods have cut our factory costs in two.

Here the whole car—chassis and body—is built without any waste. And the saving, which amounts to millions, pays for all these extras.

The full line includes 19 body styles, open and closed models. This is the largest line of like class cars in all motordom.

Dealers who feel that they can sell a car that is built—and lives up—to such standards are invited to correspond with us. There is still some territory open.

MITCHELL MOTORS COMPANY, Inc., Racine, Wis., U. S. A.

$1525

Mitchell—a roomy 7-passenger Six, with 127-inch wheelbase and a highly developed 48-horsepower motor.

Three-Passenger Roadster, $1490.
Club Roadster, $1560. Sedan, $2275
Cabriolet, $1960. Coupe, $2135.
Club Sedan, $2185.
Also Town Car and Limousine.

TWO SIZES

Mitchell

Sixes

$1250

Mitchell Junior—a 2 or 5 passenger Six on similar lines, with 120-inch wheelbase and a 40-horsepower motor. ¼-inch smaller bore.

Club Roadster, $1280.
Sedan, $1950. Coupe, $1850.

All Prices f. o. b. Racine.

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MOTOR WORLD

for

DEALERS, JOBBERS AND GARAGEMEN

Volume LIII
No. 7

New York, November 14, 1917

Ten cents a copy
Two dollars a year



DEALERS HAVE NO PRICE CUTTING COMPETITION AMONG EACH OTHER

A New Idea in Tire Selling

Miller offers an ***exclusive*** agency proposition to one dealer in each territory.

If you become a Miller Dealer, ***all*** the Miller business in your territory will be ***yours.*** You share it with no one. Your prices cannot be regulated by a price cutting competitor.

You get ***all*** the profit from the Miller Tires sold in your territory. You control the business.

The big 1918 Miller National Advertising Campaign will soon begin. Big forceful advertisements in all the leading national and trade publications will create thousands of new Miller users.

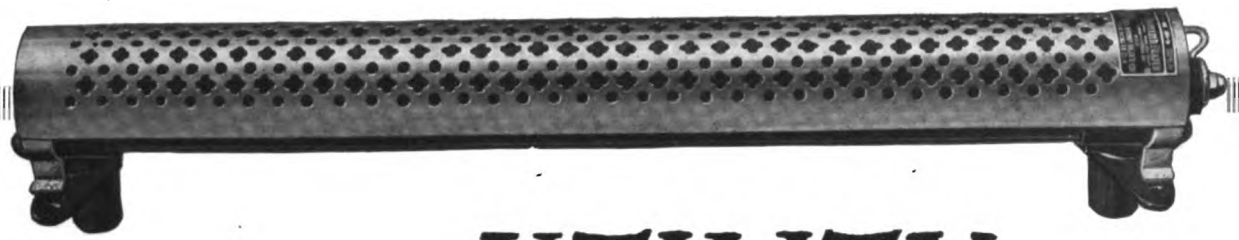
But our exclusive agency proposition and national advertising campaign are but a small part of the sales plan that Miller offers its dealers. This remarkable plan has enabled Miller dealers everywhere to increase their tire business, decrease their selling cost and make larger margins of profit.

Your territory may be open. It will be decidedly worth your while to find out and to learn all about this New-Day Sales Plan. Write us today.

The Miller Rubber Company
AKRON, OHIO

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UTILITY Protected Foot-Rail HEATER

Is Now Standard Equipment on All ELGIN SIX SEDANS



The manufacturers of Elgin Cars equip with refinements most essential for comfort, and best qualified to give it.

It is significant to note that UTILITY Protected Foot-Rail Heaters are now included in the specifications of this popular Sedan.

Hill Pump Valve Company

Archer Avenue and Canal St., Chicago

Eastern Branch: 149 Church St., New York City



The New ELGIN SIX Sedan

Standardly Equipped with UTILITY Protected Heater

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TO keep up with business requirements, Studebaker is continually branching out and improving its facilities and service everywhere.

This new 7-story structure now being built to house both the retail and wholesale sales branches in Philadelphia, is the latest addition to Studebaker's great chain of branch buildings throughout the United States and in every part of the world.

Studebaker's tremendous financial resources and its sixty-five years of successful business experience make possible this fixed policy of constant improvement and expansion.

STUDEBAKER

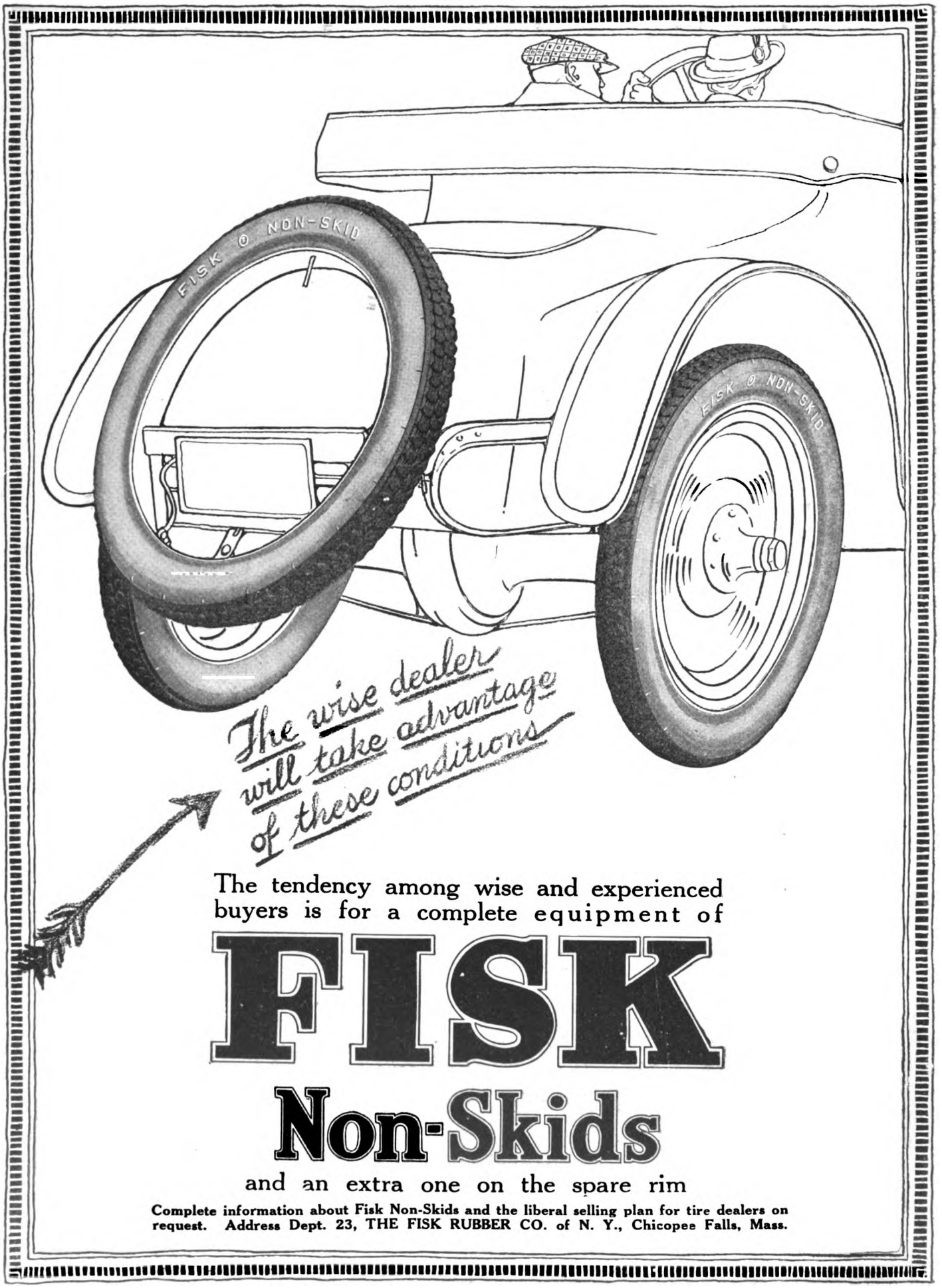
Detroit, Mich. South Bend, Ind. Walkerville, Ont.

Address all correspondence to South Bend



The New Studebaker Branch at Broad and Brown Streets, Philadelphia, Pa.

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The tendency among wise and experienced buyers is for a complete equipment of

FISK

Non-Skids

and an extra one on the spare rim

Complete information about Fisk Non-Skids and the liberal selling plan for tire dealers on request. Address Dept. 23, THE FISK RUBBER CO. of N. Y., Chicopee Falls, Mass.

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MOTOR WORLD
for
DEALERS, JOBBERS AND GARAGEMEN

PUBLISHED EVERY WEDNESDAY BY

The Class Journal Co.

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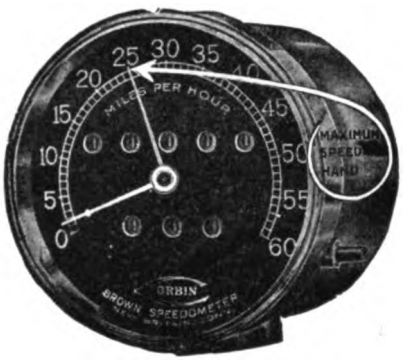
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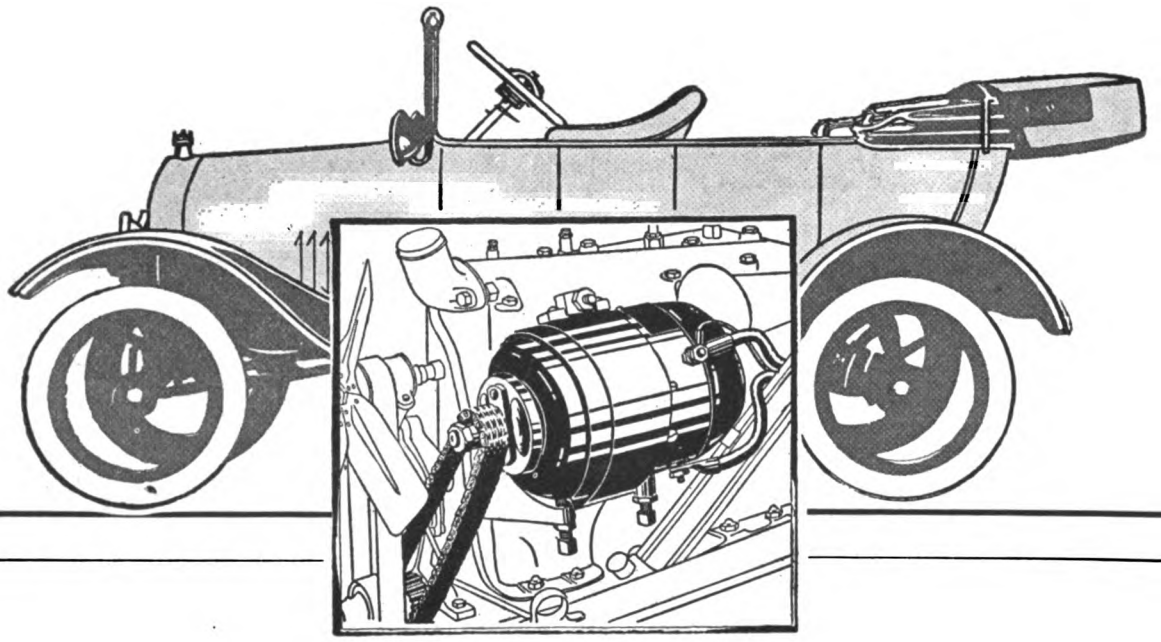
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MOTOR WORLD
for
DEALERS, JOBBERS AND GARAGEMEN

Vol. LIII New York, U. S. A., Wednesday, November 14, 1917 No. 7

The Dealer and the War Situation

What It Is and What He Should Do to Meet It

THE other day the newspapers said the government was going to cut down motor car production.

Then the newspapers said car factories were to get no more alloy steel.

And right then dealers began to worry. They said:

1—*If car production is cut down, where do we get off? The factories can keep busy making munitions, but what will we be able to sell?*

2—*What is going to become of the* 30,000 *dealers in the United States?*

Dealers were justified in worrying. But TO-DAY there is NOT this need for worry. Instead there is a need for calmness and serious attention to business, for the factories have a plan under way that should solve the situation for all of us.

The plan briefly is this: The shutting down of factories—if any—will be left in the hands of the car makers themselves, and the car makers believe there is steel and coal and factory capacity enough to make both cars and munitions if the plan works. They believe it will work.

Cool heads are necessary.

In order to allay the fears of dealers the Hupp Motor Car Corp., at a convention in Detroit last week, Monday and Tuesday, did two things. It told the dealers what the situation is and told the dealers what they must do to pull through.

The same thing applies to all dealers. They MUST co-operate with the factories, with the War Committee, with the railroads and with all the other war elements. Freight cars must be unloaded promptly, even if the cars have to be set in the street and covered with tarpaulin, requests and letters from factories MUST have prompt attention, every suggestion as to HELPING THE INDUSTRY must be acted upon PROMPTLY.

If all dealers do these things there is a fine chance of business this winter. The whole salvation of the dealers is pretty much UP TO THE DEALERS.

Here follow two talks made to the Hupmobile dealers. Read them and take them to heart. They are good, sound advice to EVERY dealer no matter what car he sells.

What the War Situation Is

As told to the Hupmobile dealers by Vice-president and General Manager C. D. Hastings of the Hupp Motor Car Corp. at a dealers' meeting in Detroit, Nov. 5 and 6. Hastings has been at Washington and is in close touch with the situation.

I THINK you will all be interested in a short summary of the meeting of motor car and accessory manufacturers held in Washington last week, largely as a result of the newspaper talk of immediate reduction of some 40 per cent of the output of motor cars.

This meeting was attended by some of the largest manufacturers in all lines, including one or two steel representatives. It was stated on authority that Government needs and commercial needs in alloys and steel were practically *all taken care of by judicious distribution of the output.*

The needs of the motor car industry were placed at about 5 per cent of the total output.

There is a shortage of some alloys, but it was reported that this shortage was in the way of being taken care of very promptly, largely depending on ocean transportation.

The Government has many thousands

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of tons of fabricated steel lying in warehouses and on dock, which authorities say cannot be used, much of it for from six to eight months. The proposition was made and unanimously adopted at the meeting to

1—*In the first place, offer the service of the motor car industry to the Government to any amount of its means.*

2—*In the second place, request from the Government a budget showing what the needs were.*

3—*In the third place, form a Committee of three of the strongest men in the industry to be permanently stationed at Washington, their service to be at the disposal of the War Industries Board, to formulate a systematic handling of all the Government's needs that can be taken care of by the automobile and accessories people; to determine which of these needs could be handled to the best advantage by any member of the industry and to distribute the work accordingly; to ask that the Government Committee TAKE NO ACTION affecting the output of the manufacturers WITHOUT FIRST CONSULTING WITH THIS COMMITTEE.*

The board was unable to furnish a budget for the reason that they have nothing of the kind. Each department of each committee was apparently working on its own hook, placing orders wherever they can see a way to pry in and, in many places, placing them very disadvantageously for the Government in the way of prompt and economical production.

A concentration of these needs and the apportionment of the work by the Automobile Committee will largely obviate and perhaps entirely do away with this dangerous and expensive method.

The War Industries Board welcomed the suggestion of the committee and asked how soon the committee would be on the job. Our spokesman suggested the next morning, which, I believe, was the fastest move that Washington has seen since the beginning of the war.

In regard to the request that no action affecting the industry be taken without first consulting the committee, the board stated that they could not tie their hands in any way that would prevent them from taking prompt and immediate action in the case of an emergency, but that they *are very anxious to refrain from any action which would be detrimental to the welfare of the industry*, and unless an emergency should arise, that *consultation would be had before taking any action.*

The committee is now being formed by the presidents of the two associations, and will consist of three men, who will undoubtedly be very strong men, and I am positive will work to the great advantage of the Government and *certainly to the relief of the automobile manufacturers* who are now suffering from a multiplicity of ill-founded newspaper talk more than any other cause.

There is one feature that we should bear in mind. The average man, whether he be merchant, manufacturer or professional man, believes that the automobile business is one of enormous profits and a great many of them regard it as strictly a luxury.

The opinion is expressed over and over that the industry should absolutely be PUT OUT OF BUSINESS.

One of the leading attorneys of this city, talking to me coming home on the train, referred to this feeling. He is a man that is thoroughly versed in the automobile business, being the attorney of the largest company in the world and a man who spends a great deal of his time in Washington. He was talking with a well-known business man from the East who is on one of the commissions, and this man expressed the opinion that *the automobile business should be wiped out.* The attorney said:

> My dear sir, if you wipe out the automobile manufacturers, you will wipe out a great many thousand dealers whose only means of existence is the selling of automobiles—you will wipe out innumerable factories that could not stand the financial conditions resulting from a suspension of their work. When you wipe out all these industries you wipe out the ability of these people to pay taxes to the Government. You produce a bread line where no bread line is necessary. Your argument that these factories can take on other work is wrong, because they will not be in existence. A bankrupt concern cannot take on work.

The Eastern man replied:

It makes no difference if we break every industry in the country. We must win the war.

The attorney said:

I would not talk with a damned fool any longer.

That is the frame of mind of a great many men occupying positions of prominence and influence at Washington and, in fact, all over the country at the present time.

It would be foolish of us not to recognize this fact and be ready at all times to combat it.

Each one of you gentlemen is a power in his own territory, and you are not doing your duty by yourself, by this corporation or by the business at large unless you *take every opportunity to combat this talk of* PLEASURE CARS.

Mr. Drake yesterday spoke of an impromptu talk at luncheon by a man who is the head of the work being done on the standard truck. I wish I had verbatim these remarks.

It was the greatest short sermon on the value of the passenger car in the

Some High Spots in Talks at Hupmobile Dealers' Convention

Fourteen freight cars of automobiles stood unloaded on the tracks in Boston. This was part of the evidence on which an order was issued curtailing the use of automobile shipping.—C. D. Hastings.

Who was to blame?

You must believe our factory letters are serious. You must pay attention to them. This is no time for camouflage.

If you believe the motor car is a "waste" product, a non-essential, get out of the business while the getting is good and you can save some assets. But don't get into a blue funk. Go right ahead as though everything were all right and the chances are it will be all right.

Believe the car is an essential. If we don't believe it how can we expect the government to believe it?—Lee Anderson.

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present crisis that I believe anybody could put out. One sentence stuck out above all the rest and has remained in my mind ever since. He said:

> Gentlemen, what is an automobile for? It is for transportation service.
>
> What difference is there between a truck and a passenger car? Absolutely none whatever except occasionally in the material that it is carrying.

I think you might all stick that in the back of your head and put it out on every possible occasion.

There will without any doubt be numerous attacks on our business. The automobile manufacturers through the National Automobile Chamber of Commerce are in touch with the situation at all times. I think they are all alive to the necessities of the situation and you will be advised in the future, as you have been in the past, when prompt action occurs.

Bear in mind, you dealers, that you are as a body a thousand times more powerful to direct legislation than the very few automobile manufacturers. Use your power every chance you get. It is a matter of self preservation.

Reduction in Product

Now in regard to the talk of the reduction of the product. I think in many cases this reduction will take place.

The very attitude of mind that some of the manufacturers have gotten themselves into will affect their own product.

Take yourselves: If you had a contract for one hundred cars and made up your mind that you would only get sixty, it is a cinch you would let down in your work because you would only require 60 per cent of your effort to sell your allotment.

So with the manufacturer. If he has arrived at the conclusion, as some of them have, that their output is going to be restricted, *I believe that the result is inevitably a restriction of that company's output.*

I am absolutely certain that many companies are going to be restricted by reason of the quality of their product. Still others will be restricted by reason of their financial status. The banks are not going to be as liberal this year as they have in the past. Again other companies that have been having hard sledding will restrict their own product by taking on other work.

Gentlemen, if the crisis comes, and, as our friend from the East says, it is necessary to bankrupt the whole nation to win this war, *we will all go down together.*

Now I do not mean to say that. WE WON'T GO DOWN! We will meet the emergency when it comes and will go ahead and do business—maybe some different business or in a different way. But a year from now, when we have our next annual convention, *I believe we will all be here together.*

Profits may be cut down. Taxes are high. There never was a time in the world when there was so much money available. The country is tremendously prosperous.

There are spots here and there where conditions are not as desirable as they might be, but as near as I can tell from what I have heard in my talks with you and from all over the country, there seems in almost every case, *where one factor is disappointing, other factors are making it up.*

What the Dealer Must Do

As told to the Hupmobile distributers and dealers by Sales Manager O. C. Hutchinson. It is worthy of the attention of ALL dealers. It contains sound thought

IN arranging the program for this convention, we have endeavored to make it of value to you by giving you the fullest possible information regarding our manufacturing, advertising and selling plans, that you may be better prepared to go back to the firing line and open up your campaign for increased Hupmobile sales.

The success of the Hupp Motor Car Corporation depends entirely upon our ability to market the product, and when I say "our" ability, I mean "your" ability, plus the sincere, earnest co-operation and assistance of this sales department.

Our product is not sold until it reaches the consumer through the mediums of the distributer and the dealer, and we must look to the user as the one who really pays the freight.

It is the individual buyer that pays for the automobile, and we look upon you men, not alone as so many valuable customers, but as the most vital, the most important part of our sales organization—the channels through which our product reaches the owner.

It naturally follows that the more individuals that can be solicited, the greater number of sales can be made.

It is also obvious that the greater number of people can be interested the more thoroughly the territory can be developed and made profitable.

Make Sales Calls

In the State of North Dakota, for example, there were 38,000 motor cars registered on Jan. 1 last. Of this number 18,000 were Fords, leaving a balance of 20,000 cars of other makes.

If it were possible for the sales representatives of Hupmobile dealers to have called upon each one of these 20,000 buyers, what do you suppose our sales in that State alone would have been?

If only 5 per cent, and that is a conservative estimate, had bought Hupmobiles, that would have amounted to 1000 cars.

Of course it is folly to even consider the possibility of calling on *all* the buyers in your territory, but each of you should increase your dealer's organization so that a greater number of prospects may be seen, and sales are bound to follow.

Right now, with this new Series R car, the best value we have ever offered, is *the time to make the analysis of your territory. Don't wait until you have had another year's experience, and lost business in sections where you are not properly developed. Survey and study your territory thoroughly—know conditions.*

We are going to help you in this analysis covering your territory, and when you reach home you will find a report, compiled in our office, covering the undeveloped sections in your territory. We want you to review this and to write us frankly covering the situation.

Discuss it with our district managers, and we will help you in securing representation where you do not have dealers at the present time. Since last July we have been at work on these analyses, and in every case where distributers have shown increased business it has been by reason of a larger number of dealers being secured.

Analyze Your Territory

From our records at the office we are unable to determine just where each distributer is placing his cars, but in the case of our branch houses we know exactly how many cars are sold to each dealer in his respective territories, and we know how much of an increased volume can be had through the close and intensive development of the territory.

As to just how to go about to obtain this increase in business, *you must first make a careful survey of your territory,* picking out the towns and cities where dealers should be appointed, and where business can be obtained.

Your salesmen should be called into conference frequently to discuss territorial and general conditions. You should put it up to your territory men that you are depending upon them to increase your volume of business through securing more dealers and making your present *dealers more efficient by co-operation and assistance.*

Don't let the matter rest upon one such talk or conference, but hold sales meetings frequently.

Get Together Frequently

Get your men together once a week or twice a month, and go over the different points where dealers have not been obtained and find out what is the matter, and overcome what objections may have been raised.

Make your salesmen a part of your organization. See that they are thoroughly familiar with the new car, and see that they are themselves sold. The new catalog, which in reality is a salesman's manual, should be read and re-read and practically learned by heart by your salesmen, so that they may be better prepared to answer every possible ques-

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tion that may come up, and to properly present our proposition.

There is no short road to successful salesmanship.

If your men work intelligently, systematically, and do not misrepresent, they are bound to obtain satisfactory results. Personality has a great deal to do with successful salesmanship.

The man who has a certain amount of magnetism, if you please, or the ability to hold the interest of his customers, has a very valuable asset. But above all, he must know his product and must have confidence in what he is selling. Therefore, *do not send your salesmen out "half-cocked," or unprepared to properly represent you.*

The principal factor in increasing your dealer's organization is the thorough, systematic and frequent following up of dealer prospects, and in securing representation generally all over the territory.

Territory Must Be Developed

We allot you this territory with the distinct understanding that it will be developed, but I know, and you know, that in nine cases out of ten an increased volume of business can be obtained, which will make your business very much more profitable. *Even when we have no cars to deliver, it is policy to keep men out among your dealers,* assisting them with their retail prospects and securing orders for *future delivery.*

In July and August last, the clothing and suit salesmen were out with winter goods, and they are out now with spring and summer raiment. The hardware jobber secures his large volume of business through frequent calls upon his trade. Are these lines any more standard than the automobile trade to-day? Do you realize that there are nearly 30,000 automobile dealers in this country and 25,000 garages in addition, most of whom sell a few cars during the year? Isn't this business worth cultivating every month in the year?

The work of your salesmen should be supplemented by the proper amount of advertising in your territory, and this corporation has always co-operated very liberally along these lines.

A follow-up system, both for dealer and retail prospects, should be installed and made use of. If you haven't such a system, *we will very gladly assist you in preparing form letters* for that purpose with a very definite aim in view.

Don't let the increase in postage rates of one cent on each letter prevent you from keeping in constant communication with your prospects.

Along these lines we are going to ask you to furnish us, on cards provided for that purpose, with the names and addresses of all purchasers of the "R" car. We are going occasionally to send these owners a piece of literature direct from the factory—we may write them an occasional letter—but we do want these buyers to feel that the Hupp corporation, here in Detroit, has a direct, personal interest in them, and I can assure you that when it comes to selling another car a year, or two years from now, *your work will be made much easier.*

As to marketing conditions for next year, we do not believe that the war situation, taxes or Government loans will seriously interfere with our market.

Don't misunderstand me. Competition is going to be keener than ever, and increased efforts will be necessary, but with the new Model "R," at a price 10 per cent lower than the Model "N," there is not a district, large or small, that should not show a material increase over the business this season.

The great majority of people are earning more money than they ever did before, and they are spending this money freely; particularly is this so in the agricultural sections.

In Illinois, for example, the value of farm crops for 1917 is estimated at seven hundred and six million dollars as against four hundred and thirty-nine million dollars in 1916.

The total increase in the farm value of crops as compared to last year is $2,375,000,000, the total value this year being about nine and one-half billion dollars.

In only two States, Maine and Montana, is there any decrease over last year, and that is only nominal.

Isn't the farmer—be he raiser of cotton, corn, wheat, potatoes or live stock—going to spend some of this tremendous income for automobiles?

Then, again, millions upon millions of dollars are being spent by the Government in the manufacturing centers all over the country for munitions, ships, army equipment and numberless other items. This money is not being hoarded, but is being put back into trade immediately.

Optimistic as to Demand

While the market may be somewhat disturbed for the next few months until manufacturers, merchants and individuals adjust themselves to a war-time basis, we feel confident that with all the money that is being spent by the Government there will be at least as great a demand for cars of our price class as has existed previously.

For a few months *it may require a little more effort,* possibly a little more concentration in territories where business is a little slow at this time, *but I do not believe that we need have any fear for the future.*

People do not come in and buy automobiles as they do cigars. They never have and they never will—but this country is not going to the "demnation bow wows" because we are sending hundreds of thousands of our young men across the water, and billions of dollars are being spent in our efforts for humanity.

Business is going on as usual. *An automobile is an absolutely necessary article in the business world to-day,* and is therefore going to be bought, and with the car which you have to offer you are not only going to be able to take care of present Hupmobile owners, but you are going to get buyers from the thousand dollar class and from the fifteen hundred dollar class as well, on account of the quality and performance of the product which you are selling.

There is one matter over which you have no control, but which is growing more and more serious and will continue to do so, and that is the freight car situation.

The Government is requiring and commandeering more and more equipment every day. Automobile cars are being used for shipment of all kinds of merchandise and the shortage will unquestionably continue.

I know of one distributer handling the Buick car, who two weeks ago drove fifty-one cars away from Flint because he could not get railroad equipment for shipment to the South.

Another distributer drove eleven Cadillacs away from Detroit for the same reason.

It will, therefore, be necessary for you to anticipate your orders and to *stock cars this winter,* provided we are in position to ship you, and by spring it would not surprise me if we would have to ask you to *drive a very large proportion of cars away from the plant.*

Prompt Unloading Urgent

We have written you and pleaded with you to unload cars promptly, and there are very few of our distributers who are not co-operating with the Government and with ourselves in the prompt unloading of cars, thus making railroad equipment immediately available.

This is going to help us to secure cars.

If the reports to the railroad commission show that equipment used by ourselves is being immediately unloaded upon arrival at destination, we are going to be in much better position to secure equipment than if these cars were tied up for days at a time.

Some of the officials at Washington have even taken the position that automobiles are built to move under their own power; that freight cars are needed for the prosecution of the war, and, therefore, should not be used for transportation of automobiles. Just how far the Government will go along this line, no one knows, but the situation is *more serious than you realize.*

We cannot solve all of your problems, but I want you men to feel that if you have any troubles, if you are not getting along as fast as you would like, *don't sit down and wait for something to turn up, or don't wait until we have to write you and ask what is the trouble.*

You are going to know of the slackening up of sales before we are, and I wish it were possible for you to realize that we really want to help you.

You are not only free to bring these problems to us, but we invite you to do so, and we will try to have a man on the ground to work with you and straighten out any knotty problems.

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There Is Plenty of Steel

Investigation Fails to Reveal Any Shortage—Production of Alloy Steel Increasing Rapidly

NEW YORK, Nov. 10—When the War Industries Board was asked at the hearing in Washington recently as to where the shortage of alloy steel actually exists, and no direct reply was forthcoming, it at once became apparent that the third largest manufacturing industry was being acutely threatened without the necessary evidence in the case being available. There was no specific proof at hand regarding a shortage of alloy steel that would warrant such a reduction in passenger automobile output as the orders of the board restricting makers of alloy steel making shipments for passenger automobiles would indicate.

There is no present evidence of a shortage of alloying materials, or of any new demand for alloy steel which would warrant any great change in its distribution. Far more will be made this year than last, owing to great expansions in the steel plants, particularly the addition of numerous electric furnaces. It is perhaps significant that the idea of a shortage came as a surprise to the steel makers who had no evidence in their business of any such thing, outside the general excess of demand over supply which is the same in most branches of the steel trade. Of our total output of alloy steel barely half is used in the manufacture of trucks, passenger cars and ball and roller bearings, the latter including the bearings sold to other trades.

It might perhaps be thought that a shortage of alloy steel would be created on account of the very large airplane program, but a little investigation shows that the amount of steel *already released* by the automatic curtailment of passenger car sales which has taken place is considerably more than sufficient to supply the steel to build 50,000 complete planes.

In 1916 the total production of alloy steel in the United States was 1,362,615 tons. This included tool steel, in fact every steel of a better grade than ordinary carbon steel.

As to the quantity of alloy steel consumed, precise and accurate figures are only obtainable for that small proportion which is used in the manufacture of curves and switches for railroads and trolleys. This totaled only 28,562 tons in 1916. Various estimates as to the total amount absorbed by the automobile industry for passenger and truck manufacture average around 600,000 tons. Now, the 40 per cent of production, which is not an extravagant estimate of the recent reduction in the passenger car business, will have released a good 150,000 tons of steel. In the manufacture of 50,000 complete airplanes, together with their engines, not more than 25,000 tons of steel would be required. In other words, the reduction in the output of automobiles *which has already taken place* would care for an output of 300,000 airplanes.

This figure sounds so prodigious that it would be natural to assume there was some error, and therefore it is perhaps desirable that this statement be elaborated a little. In the manufacture of an aircraft engine of normal size such as the Hispano-Suiza or the Liberty engine or any of the several others of about this power, something like 500 lb. of steel is used. This does not mean that the steel parts would total 500 lb. but that 500 lb. of raw material is necessary in order to produce these parts. In the airplane itself there is not very much steel, but what there is is fairly good steel. Stays, brackets and little sockets and all the fittings by which all the woodwork is tied together could total anything from 50 lb. upwards to perhaps 150 lb., according to the size of the machine. There are also the wheels of the landing carriage to be considered. Taking everything into consideration, 200 lb. for the total amount of finished steel on an airplane is a generous estimate. Nearly all the steel is sheet or wire, which means that the waste is very small indeed. Now 500 lb. plus 200 lb. is 700 lb., or very roughly one-third of a ton.

The real reason that the figure of 300,000 airplanes as being the steel equivalent of a 40 per cent cut in the production of automobiles sounds so unbelievable is that while 300,000 sounds a gigantic number when applied to airplanes, it is not as great as 40 per cent of the 1917 automobile production would have been normally.

There is one other new source of demand for alloy steel, and this is the greatly increased orders for guns and armor plate. Guns are usually either nickel or nickel-chrome steel, and armor plate is chrome steel. Normally the total production of both guns and armor is quite small, the weight of armor on a 30,000-ton battleship is not a large proportion of the total weight nor do its guns add up to anything very great in tonnage. The output of large guns is strictly limited by the small number of equipments for their making, and this is especially small in the United States, which was why the Allies bought so few guns here.

At the present time the Government is pushing the production of naval and military guns by the installation of its own new plant at Charleston and by the encouragement of private firms to put down gun plant. No figures on tonnage have been published, or are likely to be, but the estimated expenditure on guns for the army and navy announced in May this year is somewhere around $200,000,000. Gun steel is also being demanded by Italy, and probably by some of the other allies also. Despite all of this, however, it must be remembered that 10,000 tons of steel produces an enormous number of military weapons, the labor in production and the elaborate plant needed being the principal factors in the manufacture of ordnance. All the gun and armor plants in the United States cannot begin to require more alloy steel than can readily be produced.

Some indication of the probable smallness of alloy steel exportation is given by the total figures for 1916. In that year

The Steel Situation To-Day

1—*All the automotive products, including trucks, airplanes and passenger cars, are well cared for by half the total tonnage of alloy steel produced in* 1916.

2—*More alloy steel is wanted now, and a steadily increasing quantity will be wanted for ordnance.*

3—*There is a world-wide demand for tool steel in excess of the supply.*

4—*Tool steel output is mainly limited by a severe shortage of the alloying materials.*

5—*There is no severe shortage of nickel and chrome for structural alloy steels.*

6—*There is ample vanadium, and most of the automobile business can be cared for by vanadium and nickel steels. It can get along with very little chrome.*

7—*Ordnance plants are not yet ready to absorb any great quantity of steel.*

8—*Exports of steel are limited by shipping tonnage available.*

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all kinds of steel exported totaled 6,102,104 tons, out of which raw steel in blooms, ingots and billets was 1,508,727 tons. Bar steel was 773,997 tons. All the balance was made up of manufactured forms. Thus all the alloy exported is included in the 2,382,724 tons of bar and raw steel. It is very unlikely that the proportion of alloy to other steel was as great as the production percentage, but supposing it was the same this would only give between 40,000 and 50,000 tons as the exported total for alloy steel.

Altogether there seem to be only two possible explanations of how an alloy steel shortage could arise, other than for tools. One is that some new use for it in hitherto unthought of quantities has been found abroad, and that all steel exported for a time will be alloy steel. This is hard to believe, since it is practically impossible that any such increase in the employment of alloy steel would be an absolute secret to the steel men.

The other possibility is that the Government desires to accumulate a great stock of alloy steel for ordnance and for airplanes. For example, the orders for the Liberty motor have been placed and many orders for ordnance. It is possible that when an order is given for, say, 1000 Liberty motors, some steel maker is ordered to *forthwith* supply all the steel necessary for making those motors, whether the plant is ready to use it or not. Just the same thing might happen with guns.

Now *if* every plant which has a Government order compelling the use of alloy steel is accumulating a stock of the material sufficient to carry it on for six months or more of *future* production, it is conceivable that the alloy steel industry would be disorganized. It would create the severest possible sort of a shortage.

Such a shortage, however, would be artificial. There would be no object in creating it, because all that is necessary to insure is that every plant on Government work receives the steel it needs *when it needs it.* The natural way to order steel for a Government production would be the conventional method of calling for so many tons a month.

Shortage Idea Surprises Detroit Buyers

Recent Conditions of Alloy Steel Market Gave No Indication of Stringency

DETROIT, Nov. 10—Automobile buyers of alloy steel have not noticed any material change in the alloy-steel situation during the past month. There has been a general feeling that owing to the fact that the demands of the automobile industry are not in excess of 5 per cent of the total of the alloy steel produced in this country, and also because alloys used in the 5 per cent mentioned do not clash materially with the requirements of the Government, buyers have not been worried to any extent regarding a curtailment of supply, although taking the precaution to place orders many months in advance.

Recently a Government letter instructing steel manufacturers not to ship any alloy steels containing ferrochrome to any one not using the material in Government work was sent out. This material is used to a large extent in crankshafts, gears, propeller shafts, etc., and the order was the first indication that anything like a possible shortage was impending. This being followed up by the action of the War Industries Board reported, has made the situation acute. There is no disguising the situation that a cutting off of the available supply of alloy steels would immediately stop the production of all passenger cars not intended for war purposes.

With the exception of Ford, which has a very high percentage of vanadium steel in its product, the average passenger automobile has a relatively small amount of alloy steel contained in its chassis. Leaving Ford out, and taking the chassis of the 3000-lb. car, the amount of alloy steel used is probably not in excess of 300 lb. This is made up by the crankshaft, transmission gears, valves, propeller-shaft parts, axle shafts, differential gears, and miscellaneous small parts. Ford alone uses about 300,000 tons a year of alloy steel, due to the fact that practically the entire chassis is made of vanadium steel.

On the average truck the proportion of alloy steel to the weight of the chassis is higher. A 2-ton truck weighing 4000 lb. may have as much as 2500 lb. of alloy steel used in its construction. The ratio of alloy steel employed, however, varies to such a great extent that an average is hard to fix. In taking the Continental Motors Corp. for example, which makes about the same number of truck engines as it does passenger-car engines, and with an annual use of alloy steel which will total 1500 tons, probably about 900 tons will be used for the trucks and 600 tons for the passenger cars.

The Timken-Detroit Axle Co., whose output is now in excess of 30 per cent Government work, uses from 10,000 to 12,000 tons of alloy steel annually. These concerns are representative of the assembled-car manufacturers.

The amount of tool steel used in the automobile industry is not so high in proportion to the output as in most industries. A concern like Packard will use 20 tons a year. Continental uses from 50 to 60 tons of tool steel annually, of which 40 tons is high-speed steel, containing tungsten. Timken-Detroit uses about 1 ton of tool steel a month of the high-speed product and about 1¼ tons a month of the ordinary tool stock.

Government Work Demands Much Alloy Steel

Government demands for airplane parts, gun carriages, trucks and parts required in navy work, etc., will naturally tend to utilize a great proportion of the alloy-steel produced.

Another factor creating a tightness in the alloy-steel market is that all those favored on the priority schedules are putting orders through for work in the future, which naturally ties up the production of all possible plants to the limit of their ability. It must be admitted, however, that this ability is limited by the labor situation in a great many of the steel-producing plants as much as it is by the demands made by the Government. Plants like the Midvale, which has been taken over by the Government, and like the Carnegie, which will accept no more business except for war purposes, have naturally reduced the number of sources. On the other hand, the fact that the production of automobile companies is off to a large extent, and the relative amount of alloy steel used is small, it certainly can be taken as the consensus of opinion that the demands of the automobile manufacturer on the alloy-steel producers are not sufficient to interfere seriously with Government work.

Committee Representing Automobile Industry Studying Steel Problem

WASHINGTON, D. C., Nov. 12—*Special to Motor World*—The steel problem and the question of passenger cars as non-essential during the war have temporarily quieted while the new committee representing the automobile industry and J. F. Replogle, Director of Steel Products for the Council of National Defense, make their investigations.

The new committee, which comprises Hugh Chalmers for the National Automobile Chamber of Commerce; A. W. Copland for the Motor Accessories Manufacturers and John R. Lee for Ford Motor Co., is starting an investigation to determine the idle capacities of motor car plants and to secure data relative to skilled workers, steel and other matters vital to the war.

Replogle as Director of Steel Products is passing upon all steel and iron orders for private concerns, the United States and its Allies, and will gather the statistics relative to the steel production, demands for steel made by the automobile makers, and so forth and at a later date the committees will through the Automotive Products Section of the Council of National Defense co-operate with Mr. Replogle and the War Industries Board to determine just what action will be taken regarding the curtailment of passenger car business and to learn just how seriously the passenger car business digs into the steel output.

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Uncle Sam Wants 100,000 Mechanics

For Airplane Service in France

WASHINGTON, D. C., Nov. 12—From 60,000 to 100,000 men for 49 different lines of air service in France will be needed in the next few months.

These will be needed to take care of the thousands of airplanes the Government is sending to France. Practically all of these workmen will be located in the large aerodromes that are to be located as near back of the lines as possible in France. They will serve in the aviation section of the Signal Corps.

Many of these men will be needed by December 1 of this year and should be enlisted on or before that date. Others will be required from month to month until March 1, when it is hoped the great majority of recruiting for this service will be accomplished.

These men are not to serve as aviators but in the 48 different trade lines necessary to keep tens of thousands of airplanes in active service in the war zone.

All of these skilled workmen will be given the rank of sergeant or corporal and quite a few will be ranked as commissioned officers. The class of men needed ranges from chauffeurs to drive motor trucks and cars to expert engineers, magneto repairmen, welders, machinists, tool makers, pattern makers, and motorcycle repair men.

All applicants must be 18 or older but not over 40 and must be white, physically sound and competent in the trade followed.

They must first enlist as privates. Immediately after enlistment they will be trained in a large camp in America where climatic conditions are favorable for winter training. This instruction will be completed as rapidly as possible and the men will be formed into squadrons and given rank in accordance with the ability shown during training.

The squadron is the unit of formation in aviation work and consists of 18 airplanes with all the necessary officers, non-commissioned officers and men necessary to keep the planes in condition all of the time.

The Government assumes all training expenses, such as clothing, food and quarters. The men enlisted will receive pay from the date of their approval.

In order to facilitate enlistment and to make it as easy as possible Motor World has arranged to assist the Aviation Signal Corps by publishing herewith the enlistment application blank. This blank should be forwarded to the Washington address given; or, if sent to Motor World, it will be promptly forwarded to Washington.

These workmen will be largely drawn from the motor car industry, but as the motor car factories cannot afford to lose their workmen the majority will have to come from garages, repairshops, dealers' organizations and other units in the sales and maintenance end.

Of the 48 different lines of work practically two-thirds calls for qualifications possessed by men connected with the motor car industry. There are vulcanizers, engine experts, engine testers, sheet metal workers, electricians, as well as chauffeurs and motorcycle riders. The following list shows these 48 different lines in proportion to the number needed from each, chauffeurs coming first, as more of them will be needed than from any other classification.

These Are the Men Wanted

Chauffeurs
Automobile mechanics
Engine repairmen
Office clerks
Carpenters
Radio operators
Electricians
Instrument repairmen
Cooks
Coppersmiths
Armorers, machine gun (repairmen)
Sailmakers
Photographers
Machinists
Blacksmiths
Motorcycle repairmen
Stenographers
Cabinet makers
Draftsmen, mechanical
Magneto repairmen
Metal workers
Automobile engine testers
Rope riggers
Propeller makers, airplane
Riggers, airplane assemblers
Telephone linemen
Toolmakers
Vulcanizers
Welders
Lithographers
Packers
Motorcyclists
Telephone operators
Plumbers
Painters
Tailors
Gas work employees
Buglers
Moulders
Pattern makers
Telephone adjusters
Barbers
Truck masters
Bricklayers
Cobblers
Propeller testers (airplane)
Boatmakers
Saddlers

Aviation Enlistment Application

Just fill in, cut off, and mail this slip

If you are not a skilled worker, go direct to any Army Recruiting Station and enlist anyhow as a private in the Aviation Section of the Signal Corps. Good men of any sort are needed, and good men soon find their proper level. — Motor World.

Volunteer Bureau, 119 D Street, N. E., Washington, D. C.

I desire to enlist, as a skilled workman, in the Aviation Section of the Signal Corps.

Name .....

Address .....

At present employed with.....

Trade.....No. yrs. in trade.....

If you will be called by draft, when?

.....

The mechanics will be needed to take entire care of the trucks used in all parts of the service.

Engine testers will be experts who will test the airplane engines after being overhauled or rebuilt in the aerodrome. They will also have to test the engines before the planes start out.

Engine repairmen will be experts on overhauling and doing all kinds of work on the aviation engines. This work is more particular than the average automobile engine repair.

The carpenters will have to work on repairing such parts of the airplanes as fuselage, wing frame work, etc. This calls for expert workmen, such as cabinet makers and those skilled in woodworking on automobile bodies.

Instrument repairmen will probably be drawn from watch factories or those familiar with such accurate and delicate work. Those skilled in delicate repairs in speedometers should qualify for this work.

The aerodrome will be fitted with perhaps the finest machinery for manufacturing airplane parts and expert machinists and toolmakers will be needed just as they are needed in any automobile factory to-day.

Sheet metal workers will be needed for doing all sheet metal work connected with the airplane, such as making and repairing those parts to inclose the motor and other parts for controlling the machine. As thousands of motor cycles will be required there will be a demand for riders and repairmen. Each airplane has its pneumatic tires and vulcanizers are as essential as in the automobile industry.

Much autogenous welding of tubing for plane parts is necessary, and expert welders are required.

There are many lines of work that cannot be supplied from the motor car industry, such as sailmakers, photographers, rope riggers, packers, plumbers, tailors, barbers, cobblers, saddlers, buglers, telephone linemen, operators, etc.

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"Ed" Peake, manager of the trade tour

Kansas City Says

Trade Tour Paid

Even Though Everything Seemed Unfavorable



O. C. Van Noy, Haynes. Another optimist

By Ben S. Brown

Photographs by H. C. Ensign, Empire District Manager in Kansas City

KANSAS CITY, Nov. 3—Do "trade trips" for motor car dealers pay? In war times?

Through districts that have been poor buyers of motor cars?

When country agents are full of gloom?

And it looks like few cars are going to be sold?

And you know you aren't going to scare up much of a crowd at many of the stops?

And when there is a chance that gasoline will be almost prohibitively taxed, and maybe restrictions put on the use of touring cars?

And you can't get deliveries from the factory?

And help is so short that your own establishment may go to the dogs while you are away?

Dig up a thousand more of these reasons for not making a trade trip.

To everyone of them the Kansas City Motor Car Dealers' Association would make the same answer:

"Those are reasons for hitting the line harder than ever, for making this trip the most enthusiastic."

"Are We Downhearted?"

The Kansas City dealers knew—and advanced—all these reasons this fall when the making of the usual trip through Kansas City territory was proposed. And from the very jump most of the members were eager to see the series continued.

Now that the trip is over, the members are mighty glad they went—most of the members.

There were some who knew in advance that the trip would do little good, that no cars would be sold, that public enthusiasm could not be aroused. These saw part of their fears realized, and they believe trade trips have outlived their usefulness.

But these fellows are game sports. They cheerfully abided by the opinion of the majority, and they went to a great deal of trouble to take cars on the trip, and boost and keep things going lively, just to show that they were real co-operators. However firm their convictions that trade trips are passé, they went along, and really aided materially in the success of the event.

In Days of Yore

These annual tours of the Kansas City Motor Car Dealers' Association have always had several important features. For one thing, the tours have always been used as a means for boosting good roads; meetings have been arranged at which E. E. Peake, secretary of the Kansas City association, and other distinguished exponents of good roads, have spoken.

In the "old days" these meetings, even when held at cross roads, have been very largely attended; much enthusiasm was aroused for roads—and the automobile men had a good chance to find prospects and make sales. It used to be difficult to make any fast progress because so many communities wanted the good roads boosting, and entertained the tourists so royally.

This year several communities that have made real progress on roads, arranged fine meetings, the chambers of commerce acted as hosts, and there was much of the old-time enthusiasm. But many districts did not respond. Some city officials in some towns didn't even know the tour was coming; in several towns there was scarcely a corporal's guard to meet the dealers, and there were mighty few people around to whom the dealers could talk car.

Poor Roads Hurt Business

"What's the matter with the towns where we didn't get crowds?" one dealer said. "I'll tell you—they haven't any roads to speak of into their rural territory; their local dealers aren't selling many cars, and the communities are not alive in other respects. We know they were poor car sales districts—and we know it takes something of a jolt to wake them up. It's part of our duty to help do the waking, even if it does look like a hopeless task."

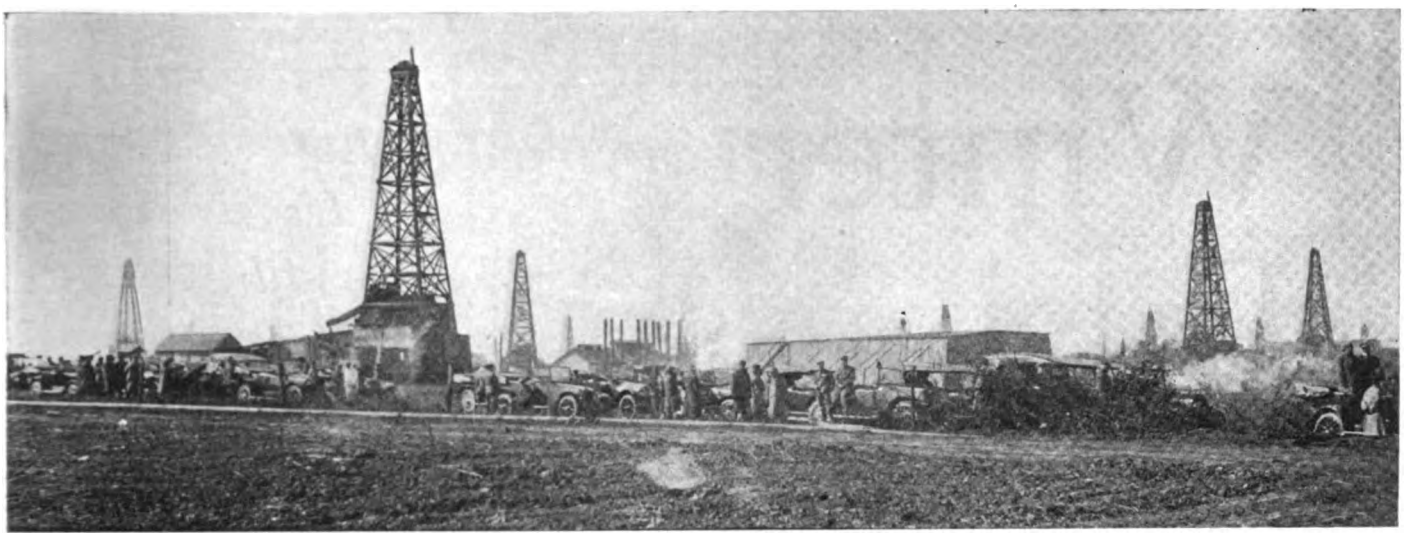
Another dealer spoke of the great crowds that lined the roads when the tourists came along on some of the early trips, eight and nine years ago.

"Good roads work was just starting then—and the automobile was comparatively new," he said. "Nowadays everybody



R. P. Rice (right), Kansas City Ford manager, and W. I. Chester (left), Chester Motor Co., Ford dealer, rambled all around the tour circuit in this Ford coupélet—and they kept right up to schedule

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The motor tour stops at Section 11 of the Towanda Pool, near Eldorado, Kan. Section 11 is one of the richest oil spots in the world and is leased by the Empire Gas & Fuel Co., whose pilot showed the dealers the most productive wells

knows what an automobile looks like—and good roads work is being prosecuted by a definitely organized system throughout the whole State. Wherever the local people have got their good roads work well started we had crowds, brought out by the local people. And where we had small crowds there was practically no local agitation for roads."

Trips Used to Sell Cars

Another thing these trips have done in the past is actually to sell many cars. Why, some dealers used to come back with orders for as many as a dozen—and when they made agency contracts for far more than that.

Nothing doing like that on this trip. Some dealers didn't sell a car—some didn't even get the name of a prospect.

Did this discourage the dealers on the trip?

Not at all! They rather liked it!

Here's why:

"Last year I got 50 prospects," said one distributer. "This year I got none. Nobody asked about my car, didn't even seem to care whether mine was a ..... or not. Yes, my dealers through the territory certainly have got their districts well organized! We sold 70 cars a month a year ago in the summer—and the dealers kept that same lick up all winter. And it looks like they are going to keep up the summer average this winter, too."

Country Well Organized

This was the statement of many dealers who did not arouse an inquiry on the trip; their dealers had thoroughly acquainted the territory with the cars, and were doing good business. In many cases the agents came around to meet the Kansas City distributers, and occasionally they brought their prospects. But not often.

So that the good roads propaganda to bring out the crowds, and the chance to sell cars, did not this year prove as successful as heretofore.

But one of the most important features of the trip is the good fellowship that it engenders and expresses, the chance of the dealers to get together and enjoy themselves, to see conditions in a body and discuss them, to catch the spirit of co-operation in the development of the industry.

Boosts Good-Will

The dealers hold frequent meetings in Kansas City; they get around a luncheon table and talk things over, and they get fairly well acquainted. But on these trips they call each other by their first names, and they josh and joke and become real friends. They forget that they are competitors.

"I don't try to sell any cars, or find any prospects, on these trips," said one Kansas Citian. "I'm out for a good time with the boys, and to let the public know that the motor car business is just as lively as ever."

They all did have a good time; and they left everywhere the impression that the motor car industry is very much alive.

Which suggests another phase of this year's trip that was the subject of comment. In past years local newspapers in all towns touched played up the tour strongly, and helped get out the crowds. This year the newspapers were chary of space for advance notices except where the good roads meetings coincided with local campaigns that the papers were boosting.

But no community was left ignorant of the fact that the motor car dealers had gone through! The trip made automobile news in every town. Those who did not come down to see the cars, saw them go by, or heard the band play, or read about it in the paper.

The effect of the trip in this respect was invaluable, many of the dealers declare.

New Dealers Pleased

While there was a difference of opinion as to the business value of the trip among the dealers who had taken the trips before there was one class which was unanimously enthusiastic—the new dealers. There were some cars this year that were not known in the territory, and their distributers jumped at this chance to get them before the people. There were some district managers who had not been on previous trips, and they were delighted with the experience.

Perhaps the most important feature of the trip, if one were to be selected from many, was the presence and the performance of the trucks. Country dealers are beginning to look with a great deal of interest on trucks for farmers' use, in agricultural districts where a truck is seldom seen. And in the oil country trucks are already used in large numbers.

The trucks on this trip demonstrated that when they had to they could keep up a stiff pace with touring cars, and that even bad roads and mud need not seriously delay them. Most emphatically, too, the trucks demonstrated that mud and bad roads would not lay out a truck. On some days the tourists kept up a 35-mile gait for many miles—the trucks following close behind. On Saturday, the last day, the touring cars made slower time over bad roads made slippery by a slow rain. The trucks kept the road, coming into controls only a short time behind.

Trucks Keep Up

For several years a G.M.C. ¾-ton truck on pneumatics has carried the baggage of the tourists; it always keeps up with the passenger cars, and did this time. When it made its first trip five years ago the tourists feared to trust their grips to it, lest it fall behind and they be without their toothbrushes and pajamas. THERE IS NO LONGER ANY SUCH FEAR.

A Nash 1-ton on solid tires and a Republic ¾-ton on pneumatic front and solid rear tires, and a Kelly ton truck with all solid tires, came into Kansas City at the end of the week's tour, right behind

(*Continued on page* 40)

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Winter Business

Let Us All Boost

Do These 3 Things

Cars Sell inclosed cars. Find out how many you can get from the factory and then plan to sell them All. Get out some inclosed car form letters. Make up a selected inclosed car prospect list. Circularize this list. Make your personal sales work fit in with the letter campaign. Use newspaper advertising. Go back to the Winter Business Number of Motor World, Oct. 10, and use the inclosed car sales ideas shown there. Stage a contest among your salesmen. Inclosed cars are easy to sell if you make an effort.

Shop Keep your shop filled all winter. To do this start NOW. Send to all car owners the Car Repair Letters shown on pages 46 and 47 of the Winter Business Number. Use the plan shown on page 26 of the Winter Business Number. Send the letters to the car owners in your territory. Telephone to them. Keep after them hard. Persistent work of this kind isn't costly and it will keep your shop from operating at a loss. It CAN be done if an effort is made.

Accessories Sell accessories from now until spring. Trim your windows every week. Make your store and show cases attractive. Motor World is now running a Department of Winter Service. Use the ideas shown there. Study "How to Use Advertising Matter" on page 27 of the Winter Business Number. Study "How to Sell Any Accessory" on page 49 of the Winter Business Number. Make your lights bright and your efforts strong.

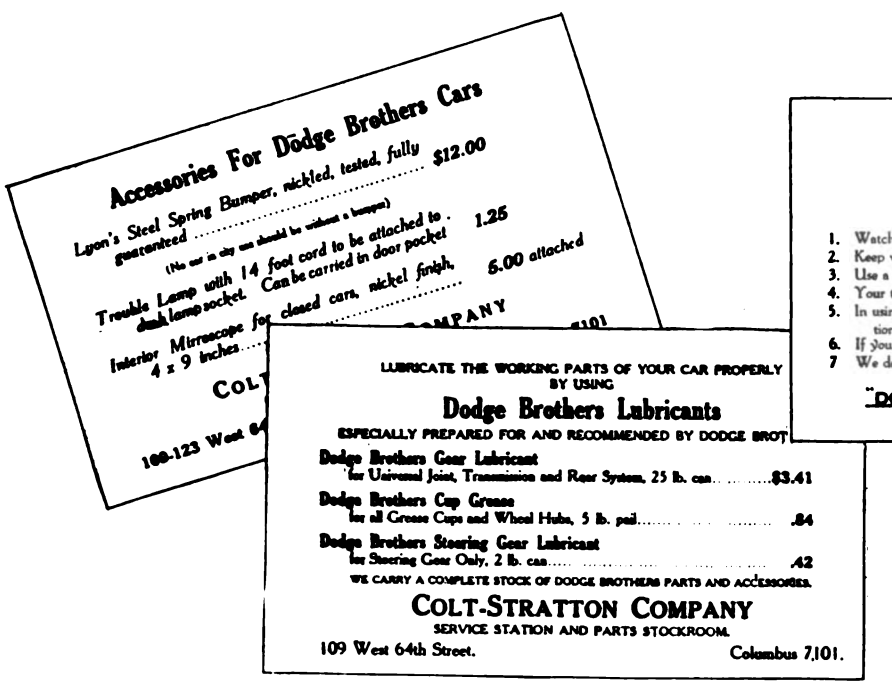
Keep an Eye on Extra Business

Cash in on the sale of some of these Extra Lines of Business that were planned on pages 9 to 29 of the Winter Business Number of Motor World. They were:

Sell farm tractors
Sell garage heaters
Sell gas engines
Sell carbureters
Sell wire wheels
Get Christmas business
Sell truck attachments
Get vulcanizing business
Sharpen skates
Sell trailers
Sell fire extinguishers
Sell winter clothing
Sell Ford starters
Establish oil service
Sell racing bodies
Sell electricity to farmers
Sell motor trucks
Repair gas engines
Make bobs and sleds
Do repainting
Do radiator work

Christmas Cards

You should send out Christmas cards to your trade, and if you're going to send them out you should begin NOW to get ready. You should at once get prices and samples. You can get these in your own town or may buy them from Motor World if you can find no better source of supply. The big point is: Get started NOW.



TREMAIN & RANKIN SERVICE

COLD WEATHER SUGGESTIONS

1. Watch the water in your radiator.
2. Keep water in your Storage Battery.
3. Use a little lighter cylinder oil.
4. Your tires will stand more air in cooler weather.
5. In using any "anti-freezing" compound for your radiator, be sure and get a solution that you know is reliable.
6. If you want a cover for your radiator and hood—we have them.
7. We do Vulcanizing and Retreading.
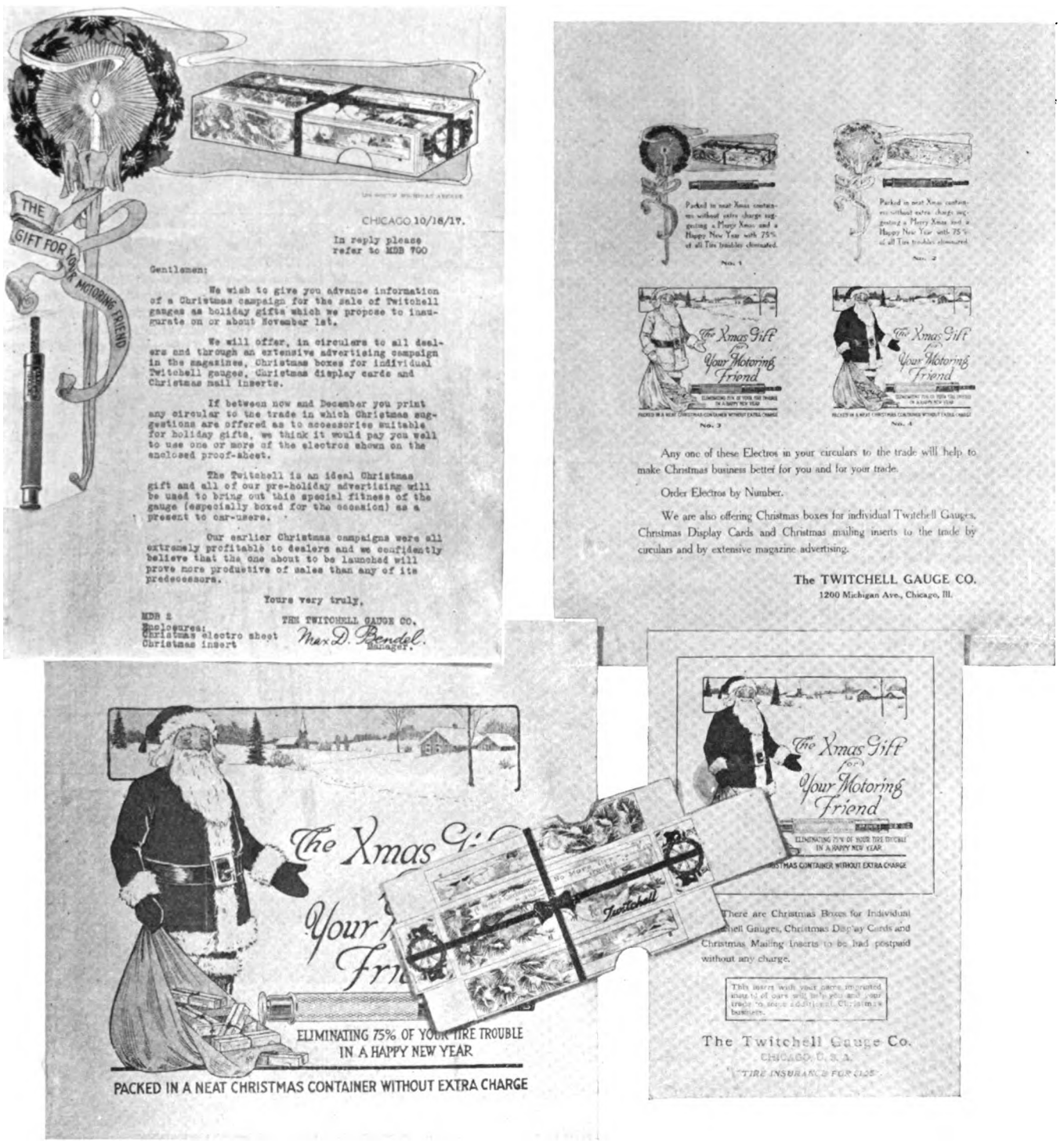
"DON'T LET YOUR RADIATOR FREEZE UP"

Three Good Ideas

Colt-Stratton, New York, and Tremain & Rankin, Fort Dodge, Iowa, are getting Winter Business through postal cards such as these sent to the prospect lists. If your car is something besides a Dodge substitute your car name and make the rest of the message fit your needs.

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Here's How Twitchell Is Boosting Winter Business



THE Twitchell Gauge Co., Chicago, has provided Christmas packages and Christmas advertising for its tire gauges. The package is shown, unfolded, in the center of the lower part of the page. There is a folder (lower left) telling what fine Christmas gifts tire gauges make. In the upper left corner is shown a letter sent to dealers telling of the Twitchell Christmas campaign. The latter suggests that Twitchell electros be used in ads that are run during the coming weeks. A folder showing styles of electros is shown in the upper right corner. By this plan Twitchell has turned commonplace accessories into Christmas gift accessories. All that was required was a folder and a little Christmas box to put the gauge in. This co-operation enables the dealer to move more Twitchell gauges during the coming two months and adds zest to the accessory trade generally. The originals of the pictures above are in red and green.

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What Dealers and Others Are Doing

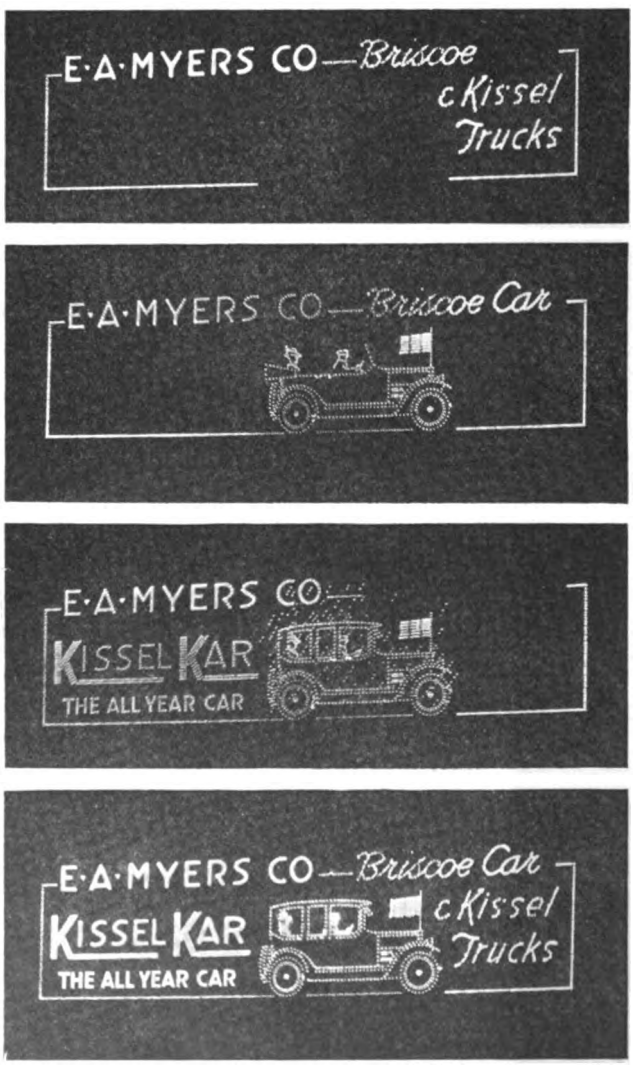
Two Pages of Pictures Snapped Here and There



The man with the trench coat on isn't going to be shot at sunrise. He is listening to the report of the officer in charge of this British armored car—one of those with the Russians in the Galician retreat. Note the tri-colored disk on the side of the car, which shows it belongs to the Allied forces. The picture was made "somewhere in France"

Personally, we don't believe in talking back to traffic cops, and if we were in Detroit we should be glad to spot the "crow's nest" occupied by this one because it would make it impossible for us to forget our resolution to never, never do it again. Maybe some of the 20,000 drivers who pass him in a 10-hour day feel the same way about it.

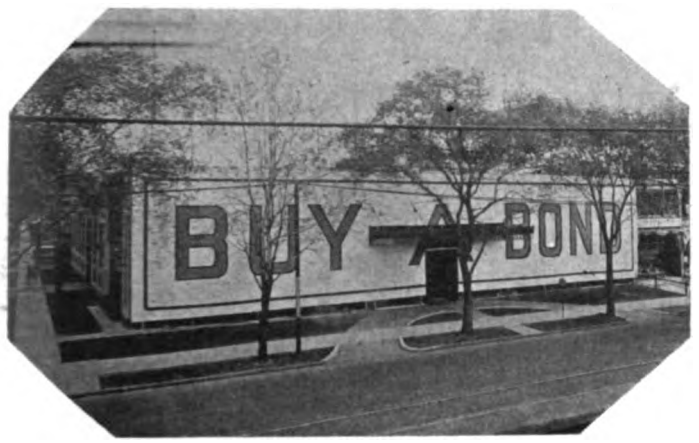


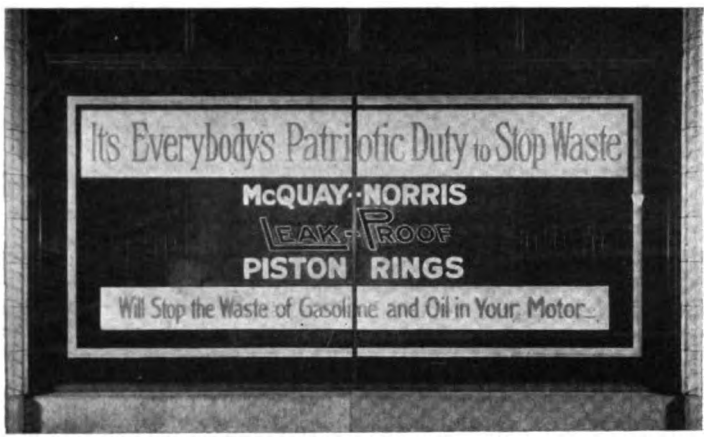


They're talking about dousing Broadway's bright lights to save coal. If they did this in Pittsburgh think how hard it would hit Myers. His new sign is 100 x 25 and in seven blinks it makes the change from sunshine to storm, or should we say smoke? Where there is smoke there is fire, they say. Anyway here are letters of fire.

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n This Interesting World of Ours





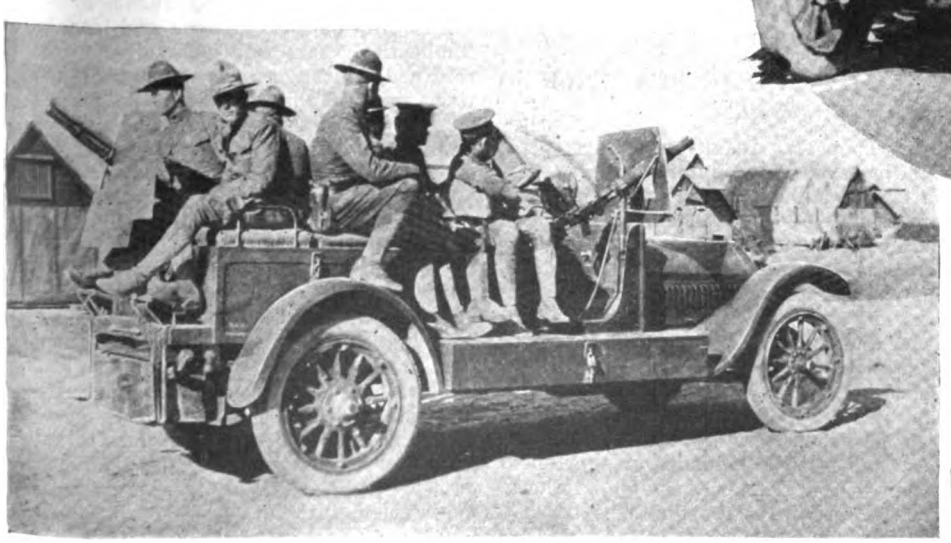
Patriotism ← and → Conservatism

We don't know whether Thomas J. Doyle figured you could dodge behind this sign (left, above) and buy a bond, but you can bond yourself to buy a Dodge, so Doyle has you coming and going. And above is the way to hitch conservatism to commerce, take a tip from McQuay-Norris.



If the service flag of the Dashiell company is any criterion, the draft will blow big holes in dealers' ranks. Dashiell lost sixteen men, which is 10 per cent of the company's pay roll. What have you done for your country?





It is becoming quite the fashion to label a military picture "Somewhere in America." (The "somewhere in France" picture is on the opposite page.) Besides its crew of eight men, each Studebaker machine gun car carries two Lewis guns and 20,000 rounds —not pounds—of ammunition, to say nothing of tools and other things that bring the total weight above two and one-half tons.

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Repairshop Shortcuts

From The Motor World Roadman

No. 1435—CRANKSHAFT GEAR PULLER

On Pierce-Arrow cars it is not an easy matter to remove the crankshaft gear, as the gear is so mounted that the standard puller cannot be used. There is, however, a V-ridge on the hub of the gear, upon which purchase may be obtained with a special puller. The jaws of this puller are in two parts, and after being slipped in place over the gear hub are bolted to the puller flange carrying the pressure screw. By turning the screw, the gear is drawn from place easily, and without the possibility of injury.—C. F. Mohr, Pierce-Arrow Service Station, Pittsburgh.

No. 1436—STRAIGHTENING REAR AXLE HOUSINGS

Rear axles may be straightened in the lathe by means of a tool that resembles the ordinary knurling tool. The only difference between the two is that the axle tool is larger and the rolls are not knurled. The axle housing to be straightened is first swung between lathe centers and rotated from the face plate by a large dog. The straightening tool is placed in the tool holder, and after the point of greatest bend is located, the rollers are pressed against the side of the housing and the axle rotated until all bend has been removed.—J. S. Perkins, Dodge Brothers Service Station, Pittsburgh.

No. 1437—BUICK VALVE CAGE PULLER

After a continued period of use, Buick valve cages frequently become set in the cylinder heads, and can only be removed with difficulty by any of the ordinary tools. When this is the case a special puller may be used, and the cage drawn from place with ease and without injury. This puller comprises two U-shaped pieces of flat stock, one within the other; the outer one resting on the cylinder head and the inner one catching the upper valve washer by means of hooked jaws. A puller screw connects the two, and by it the valve is drawn free. It is always advisable, in using this device, to first turn the valve locking pin crosswise, so that the lock washer is not bent by the force exerted upon it.—W. J. Stewart, Jr., Buick Service Station, Pittsburgh.

No. 1438—AUTOMATIC AIR TANK SWITCH

On the ordinary motor, air compressor and storage tank system, unless someone watches the gage, the air pressure will run up to a dangerous point, or else fall so low that much time is wasted in waiting for a new supply of air. This may be avoided by the use of an automatic switch placed in the pump motor line, whereby the motor is stopped when the pressure is high, and started when the pressure is low. An old electric horn, attached to a plunger type switch, may be used for this purpose. Air pressure from the tank is applied to the reverse side of the horn diaphragm, holding the switch open above any desired pressure, and allowing the diaphragm to fall back and close the circuit when the pressure is low. Adjustment is effected by means of a turnbuckle in the center of the switch rod.—Ed Sadring, South Side Garage, Billings, Mont.

A manufacturer Paid $100 for a Shortcut on this page. Which one was it?

No. 1439—WALL TOOL CASE

Storage for a large amount of small parts, as well as all of the common hand tools, is provided by a wall tool case, and a satisfactory design for such a case is illustrated. The rear compartment is bolted to the wall, and is divided into compartments fitted with drawers for nuts, bolts, washers and similar parts. The other two compartments are hinged to this, and are provided with hooks for carrying the hand tools. A clasp is fitted to the middle compartment, and when closed all compartments may be locked by a single padlock.—J. F. Hazelton, Billings, Mont.

No. 1440—ADJUSTABLE BENCH LAMP

Any shop may readily construct a set of adjustable bench lamp fixtures that are exceptionally satisfactory from ordinary ⅜-in. pipe and the standard electric fittings. Each fixture comprises 2 pieces of pipe, 18 in. long, one bent to form a half circle at the end, and the other left straight, and carrying the lamp socket and shade. The two are connected by a steel clamp, and the whole suspended on a wall bracket. The fixture may be swung up or down to any desired position, locking automatically in place, and may be extended or shortened at will.—J. S. Perkins, Dodge Brothers Service Station, Pittsburgh.

No. 1441—CRANKSHAFT SUPPORTS

It is easier to fit the connecting rod bearings on the crankshaft after the crankshaft has been removed from the car. To do so, however, necessitates the use of some sort of a crankshaft holding fixture that will not injure the shaft and yet hold it securely to the bench. Such a support comprises a wooden grooved block attached to an iron framework that in turn is bolted to the bench, the crankshaft being clamped in the groove in the block. Two of these supports are used, one at each end clamped to the main shaft bearing.—Dodge Brothers Service Station, Pittsburgh.

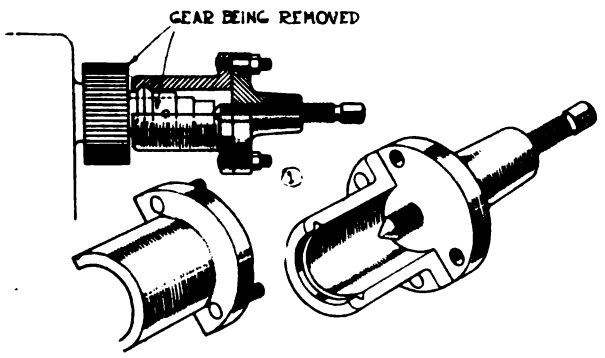
No. 1442—BRAKE ADJUSTING GAGE

A most convenient method of adjusting brakes on the rear axles is by the aid of a brake adjusting gage. The gage is simply a flat piece of steel, cut out to fit snugly over the axle shaft, and having the end graduated to the standard setting in use on the common models handled. The usual practice is to set all contracting brakes so that the lining forms a true circle 1/32 in larger than the outer part of the brake drum, internal brakes being set 1/32 in. smaller on the diameter. The proper setting is noted on the gage, and by swinging the gage from point to point the bands may be set to conform to the above conditions. This tool dispenses with the use of a heavy dummy drum.—W. J. Stewart, Jr., Buick Service Station, Pittsburgh.

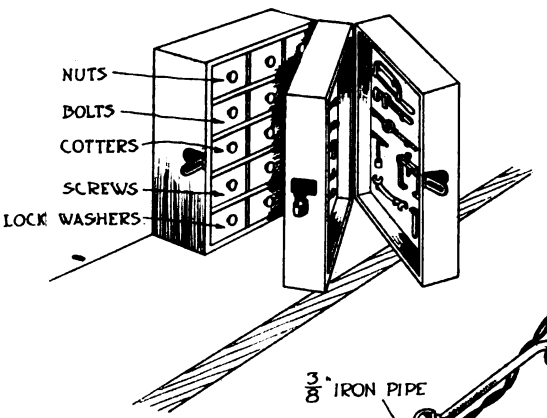
No. 1443—CURE FOR OVEROILING

Dirty plugs, excess carbon formation and smoky exhaust are caused by oil working up past the pistons and into the combustion chamber. This oil may be returned to the crankcase through the wrist pins, if the cheeks of the pistons at each end of the wrist pins be relieved slightly to form a pocket to gather the oil. It is necessary to grind or turn away about .003 in. of material around the end of each wristpin, and this may be done in a lathe by an offset piston jig. This jig comprises a plate that is screwed onto the drive spindle of the lathe, to which is bolted a similar plate carrying a ring over which the piston is slipped. Slots in the latter plate permit the piston to be offset the necessary amount, and after the material is removed from one side the piston is turned half way around and the other side machined.—C. F. Mohr, Pierce-Arrow Service Station, Pittsburgh.

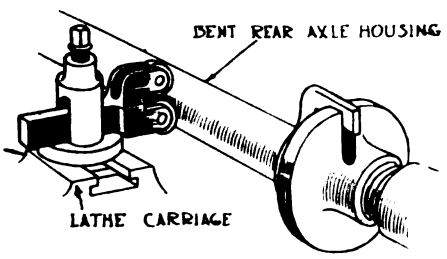
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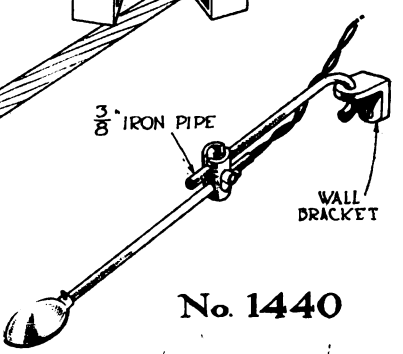
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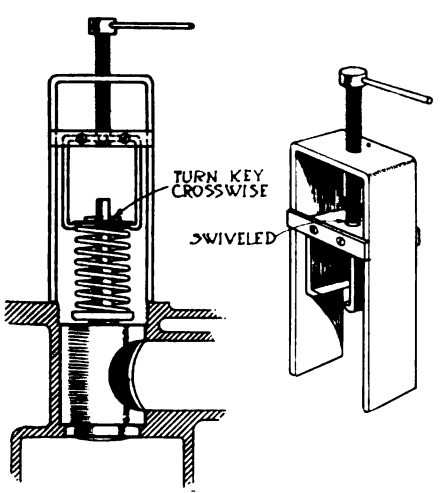
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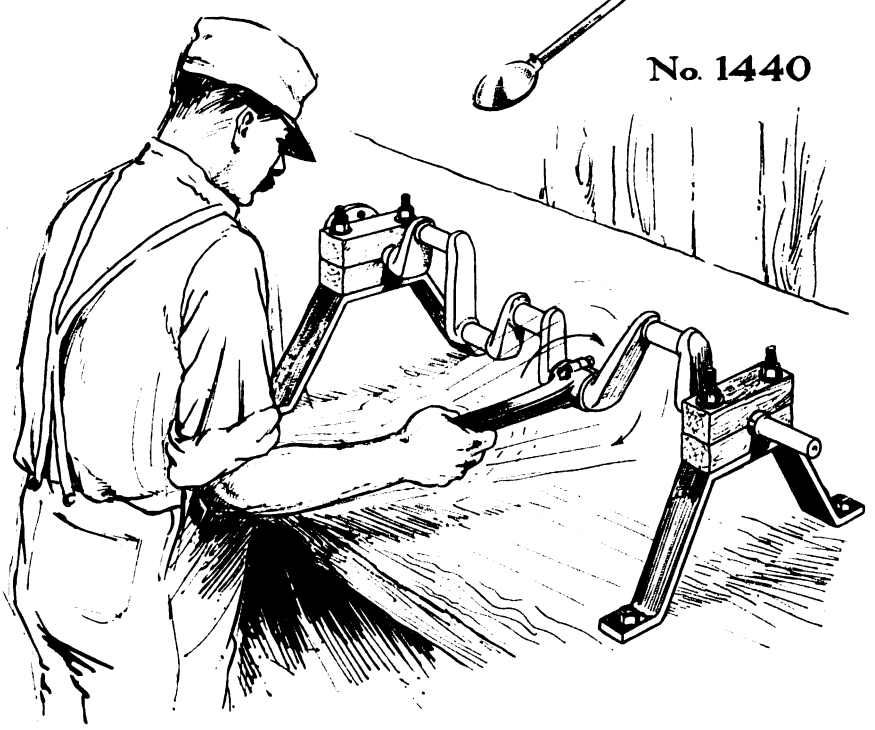
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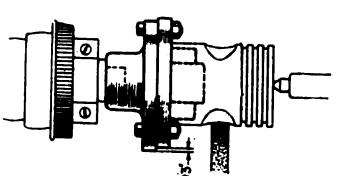


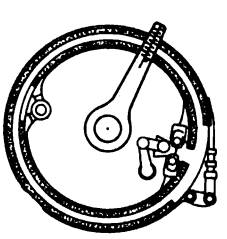
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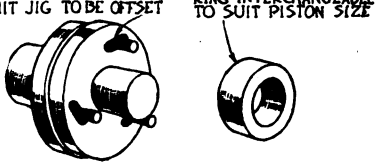


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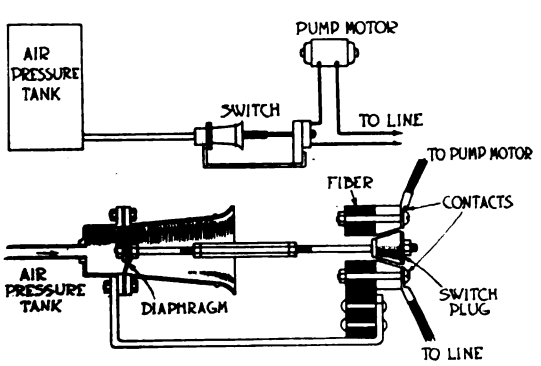






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A Department of

BETTER MECHANICS

No. 43

Westinghouse Starting and Lighting Equipment

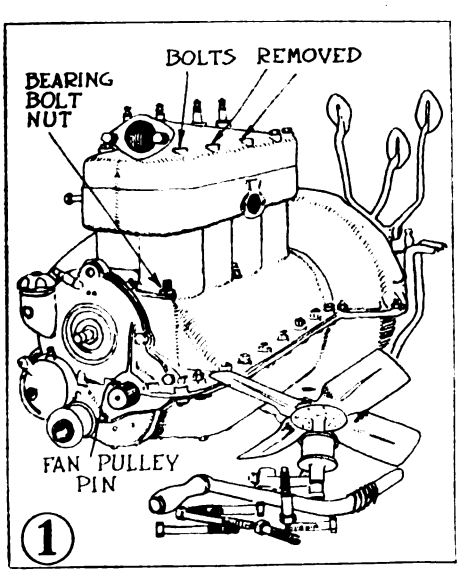
Installation for Standard Model T Ford

THIS is the first of a series of articles to be published in Motor World dealing with the installation of standard accessories. The articles will contain complete instructions to help the repairman to do his work properly. The second article will appear shortly.

THE instructions printed below cover the installation for any standard stock model T Ford, but do not take into account any accessories that have been attached to the car, such as tire pumps, water pumps, special distributers, etc. The only exception is that on the 1915 models it may be necessary to change the location of the speedometer slightly to provide space for the lamp switch.

Installation of Mechanical Equipment

BEFORE starting the work, the ignition units should be adjusted so that the engine fires evenly, in order to prevent complications later. The following are the steps for the installation:



1—Drain and remove the radiator and water connections.

2—Remove the three forward left-hand cylinder bolts (see Fig. 1).

3—Remove the fan bracket and timer.

4—Crank the engine until the fan pulley pin is in an up-and-down position, drive out the pin and take off the starting crank and fan pulley.

5—Using a special tool supplied by Westinghouse, as shown in Fig. 2, expand the front end of the oil pan until at least ⅜ in. clearance is obtained between the sprocket and the pan.

6—Dismantle the crankshaft sprocket, and with the hole in the end of the crankshaft in an up-and-down position, drive the sprocket hub onto the crankshaft with a brass or copper rod, as shown in Fig. 3. The hub must be a tight fit on the crankshaft.

7—Drive the headed pin through the socket hub, using a drift as shown in Fig. 4, making sure that the headed end is flush with the face of the sprocket. If the pin is not a tight fit, it should be bent slightly before driving. Then slip the sprocket in place on the hub and see that it turns freely without striking the projecting end of the pin. If this is the case, the end of the pin should be trimmed down.

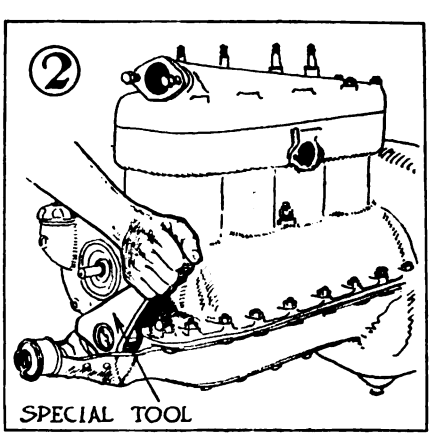
8—Remove the sprocket and assemble it on the hub in the following manner: First slip one of the friction collars onto the hub. Then snap the spring ring into place, making sure that the free end projects at least 5/16 in. out from the surface of the sprocket hub. Next place the chain over the sprocket, slide the sprocket over the spring ring, and pack it with cup grease. The stationary washer is now slipped over the sprocket hub and the spring washer placed on over it and locked in place with the nut. This nut should be tightened until the mark "O" on it lines up with the mark in the hub keyway. The grooves in the face of the nut should register with the flutes in the spring washer. The assembly view of this hub and sprocket is shown in Fig. 4.

9—Replace the nut on top of the forward left-hand bearing bolt with the special flat nut shown in Fig. 1, place the lock washer on top of it and screw the cylindrical nut tightly in place.

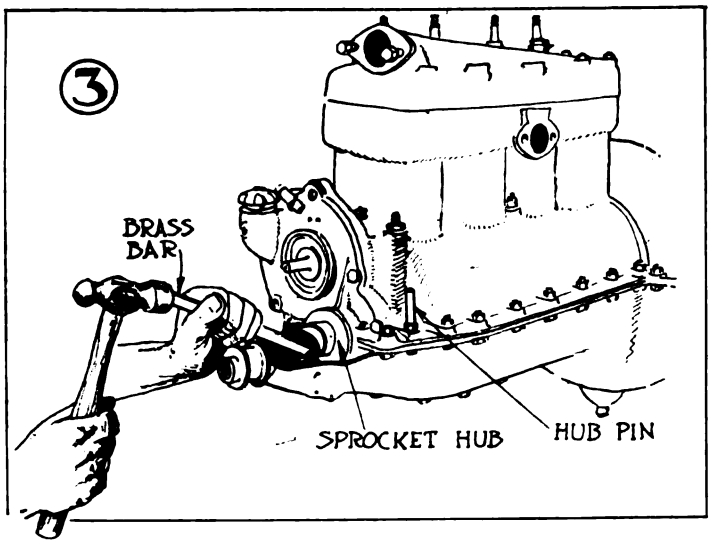
10—Replace the Ford timer.

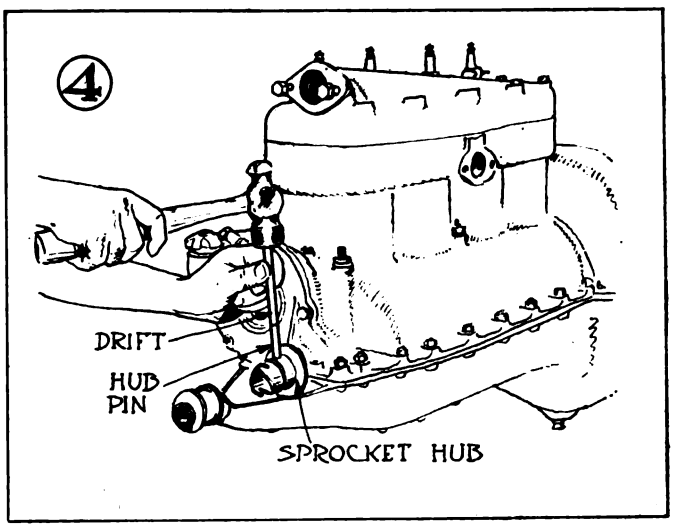
11—Set the electrical unit in place on the engine, as shown in Fig. 5, and using a scale, adjust the center distance between the shaft of the electrical unit and the engine crankshaft so that it is 11 5/32 in. All three points of support should touch.

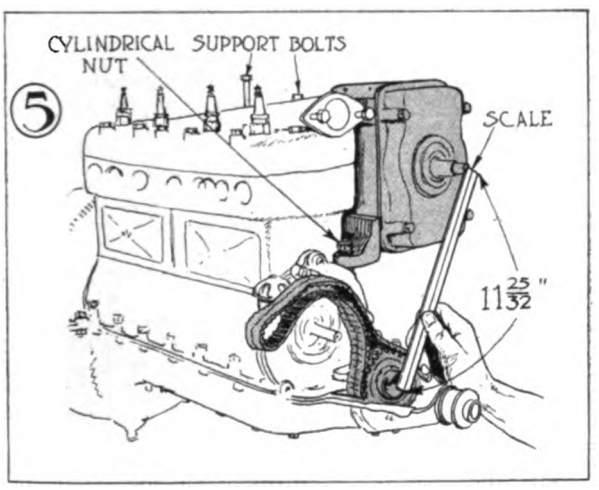
13—Remove the sprocket from the electrical unit, slip the driving chain

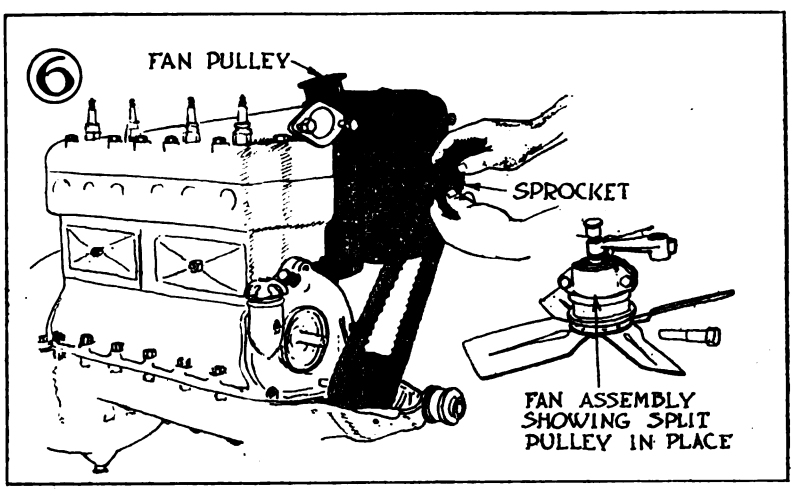


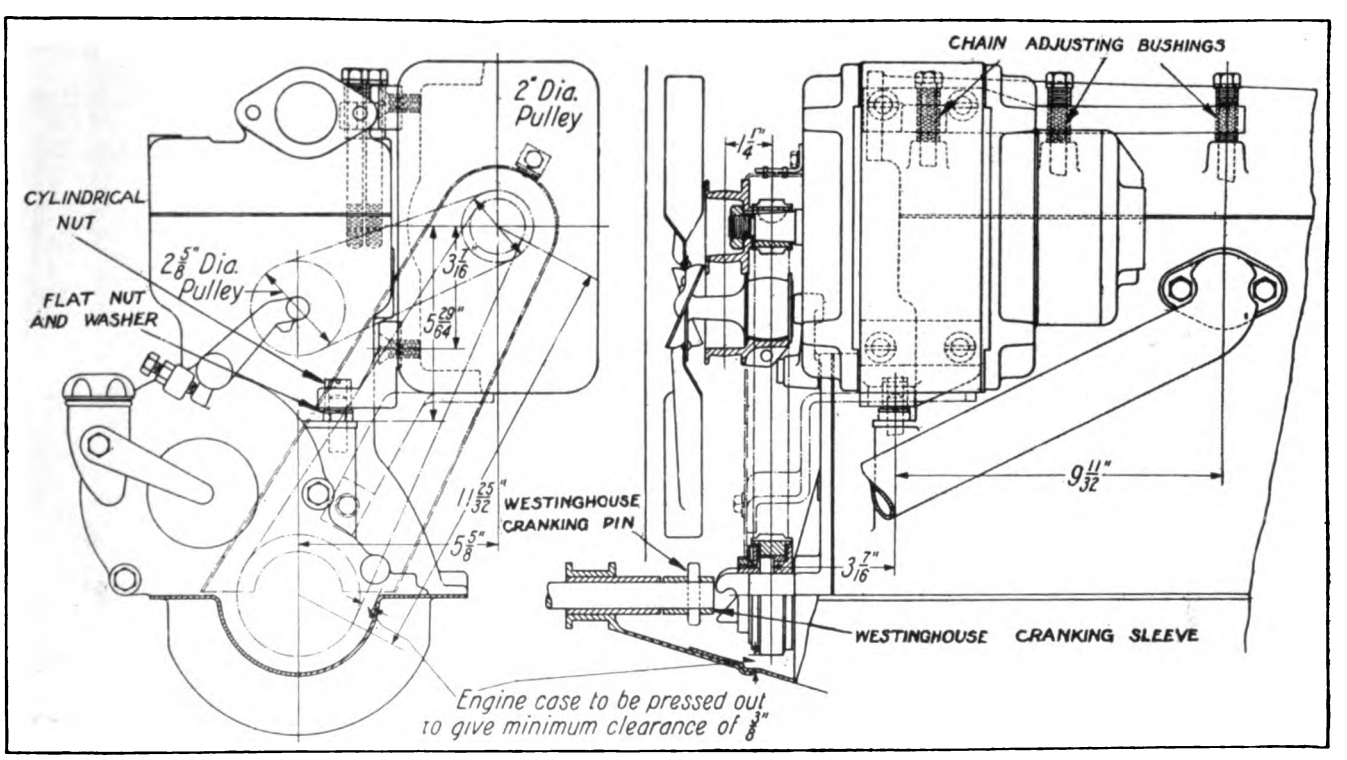
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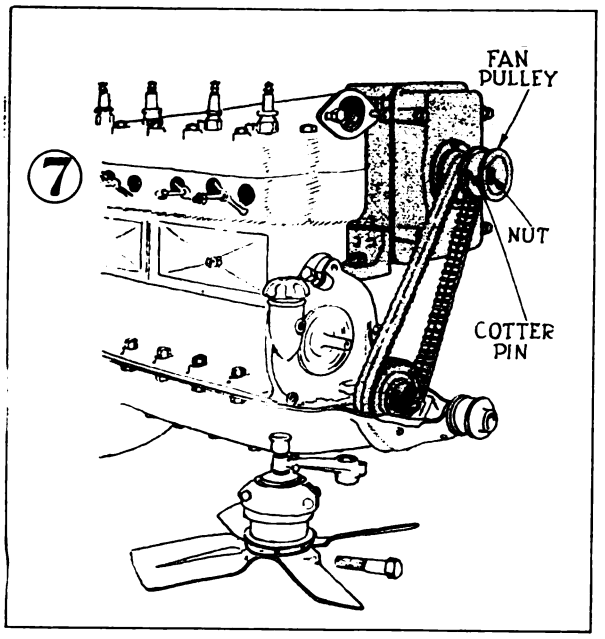


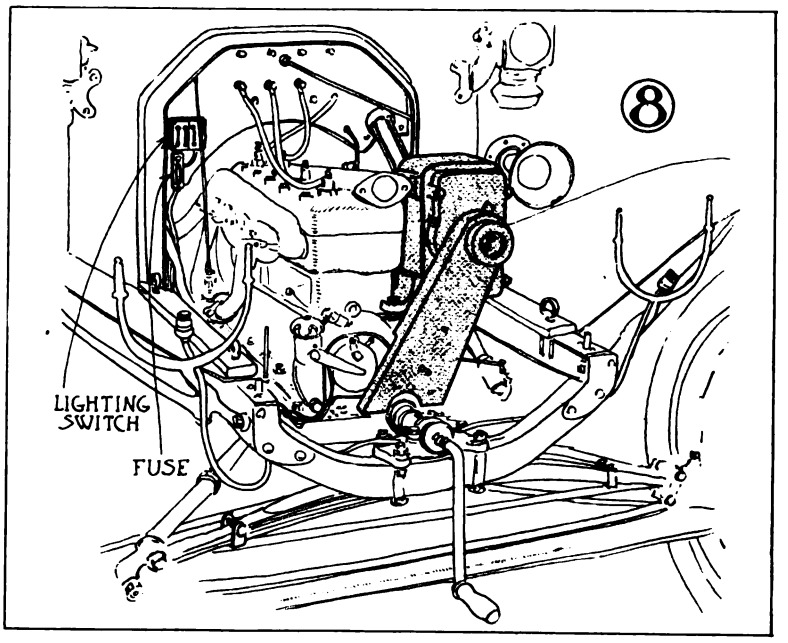






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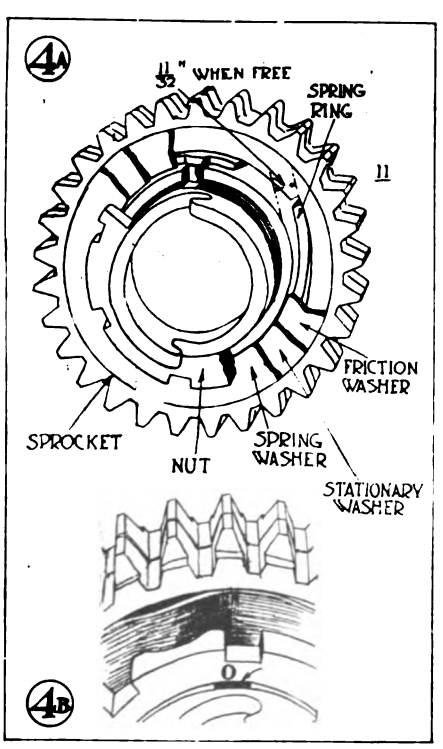
over it and press sprocket and chain onto the shaft together.

14—Adjust the chain to about 10 lb. tension. To do this loosen the three support bolts holding the chain adjusting bushings shown in Fig. 11 about one turn. Then tighten or loosen the chain adjusting bushing nearest the radiator until only a small amount of slack is present in the chain, and set the other bushings to agree. Finally tighten all support bolts. Pin the fan pulley in place.

15—Mount the chain guard in place.

16—Clamp the split fan pulley in place on the Ford fan pulley and replace the fan, using the new fan belt. The fan blades must be bent slightly to clear the starter drive pulley.

17—Instead of replacing the Ford cranking sleeve and pin, replace the ones supplied with the system on the end of the starting crank, as shown in Fig. 11. The starting crank may be slightly out of line, but may be lined up by the aid of a bar of steel.



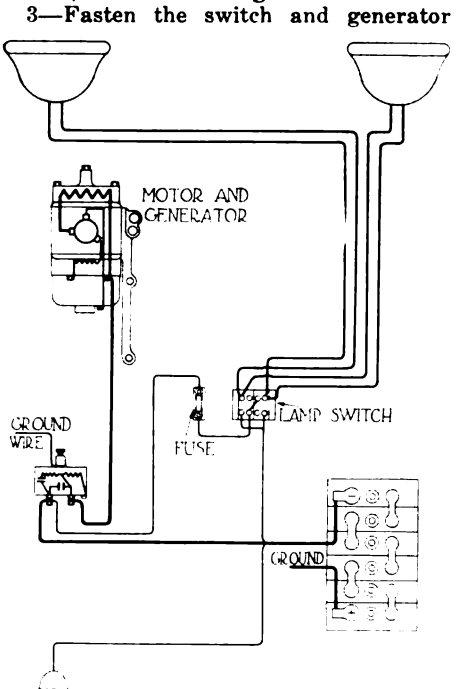
Electrical Installation

THIS completes the installation of the mechanical part of the equipment. The electrical installation is as follows:

1—Lighting switch mounting—Cut a rectangular hole in the dash low enough so that the carbureter adjusting rod will not touch the switch, and fasten the switch in place by four wood screws, as shown in Fig. 8. On the 1915 cars it may be necessary to slightly shift the speedometer to provide the necessary space.

2—Mount the fuse block below the switch, as shown in Fig. 8.

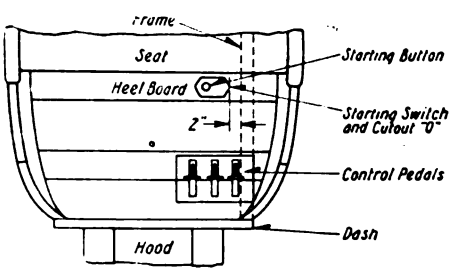
3—Fasten the switch and generator cutout onto the floorboard, as shown in Fig. 9, and so that the terminals point to the right hand side of the car when sitting in the car.

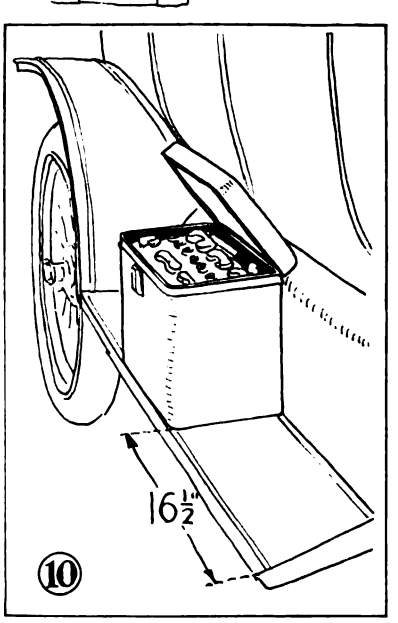


4—Mount the battery box on the right-hand runningboard, as shown in Fig. 10. Two ¾-in. holes should be drilled in the mud pan opposite the holes in the battery box for the wires.

5—Following the wiring diagram shown in Fig. 12 install the wiring. Except where wood screws are possible, the holding cleats may be attached by bolts already on the chassis. It is essential

(*Continued on page* 38)





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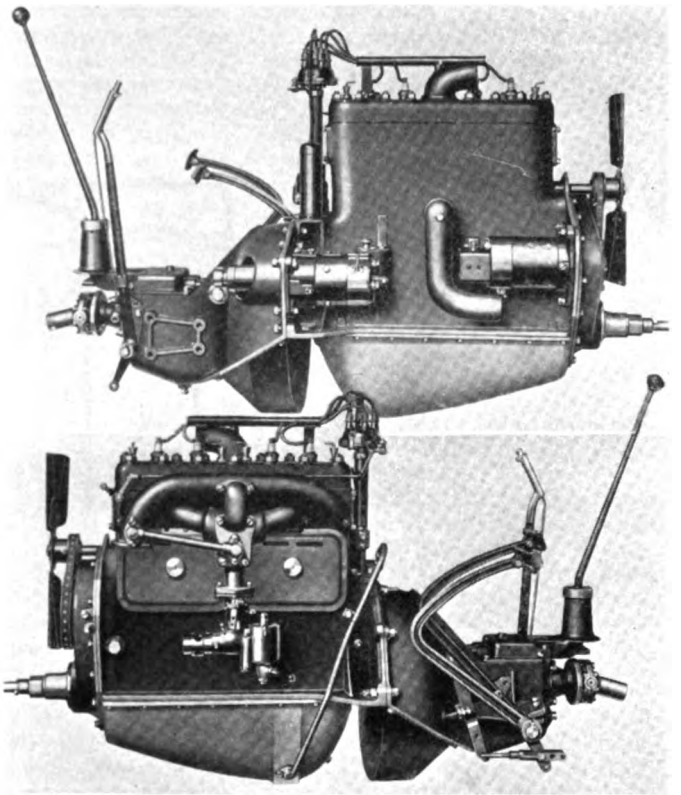
New $1250 Hupmobile Brought Out

While a Slightly Smaller Model, It Has More Room In Forward Compartment

Touring	$1250	Stroke	5½ in.
Roadster	$1250	Ignition	Atwater Kent
Make of motor	Hupmobile	Carbureter	Stromberg
Number of cylinders	4	Starting-Lighting system	Bijur
Shape	L-head	Clutch	Dry disk
How cast	Block	Gearset	3-speed
Bore	3¼ in.	Wheelbase	112 in.
S. A. E. horsepower	16.9	Type rear axle	Floating
Tires			32 x 4

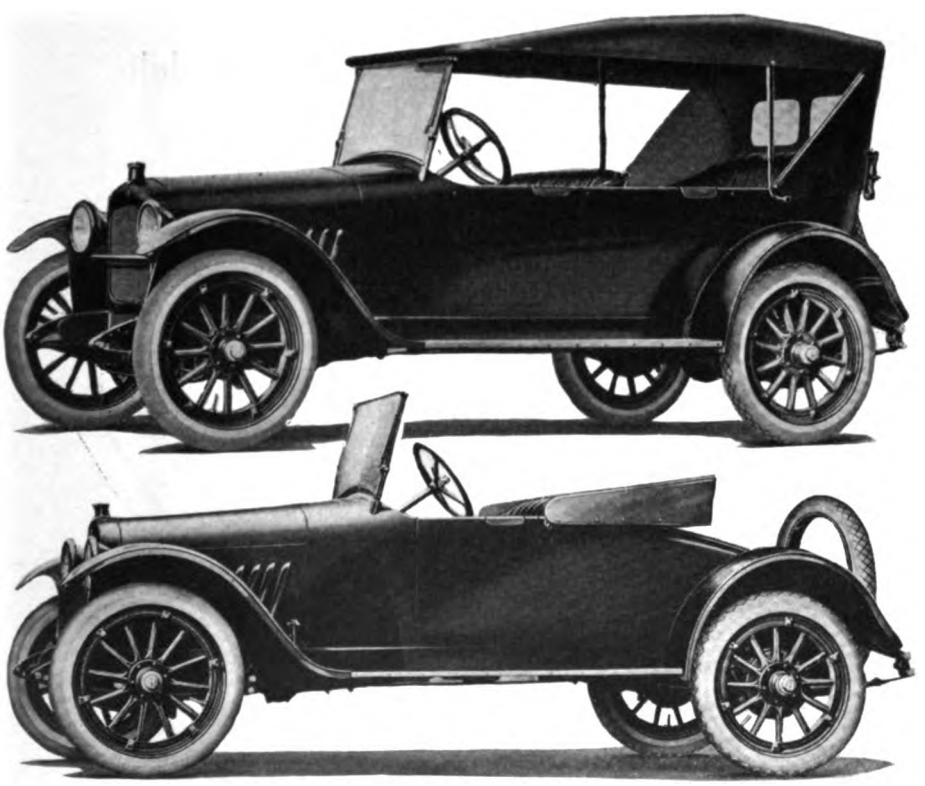
AN entirely new four-cylinder model has been brought out by the Hupp Motor Car Corp., supplanting the Series N. The new Series R is a four-cylinder car somewhat lower in price. It is a smaller car in point of wheelbase, but has an equal amount of room in the tonneau and an increased amount of leg room in the forward compartment, due to a shorter engine and the elimination of the cowl tank.

Engine, transmission units and appearance are new. Test cars have been on the road for nearly 2 years, and the new car is stated by the manufacturers to out-perform the preceding model, although it has only 112-in. wheelbase as compared with the 119-in. on the Model N.



Above—Right side of Hupmobile Series R engine, showing detachable head and mounting of starter and generator. Below—Left side of Hupmobile power plant, showing carbureter and manifolds

Two body styles are supplied. They are a five-passenger touring and a roadster. These bodies are of a composite construction, being made of sheet metal over a hood frame. The fenders are particularly noticeable in that an inverted U-section beam bolted to the front end of the frame supports the fender construction, and the material used is heavy gauge sheet steel. The five-passenger body is a conventional design, with a continuous front seat. The roadster is a single seat type and will accommodate three people. Beneath the rear deck there is a compartment which will accommodate three suitcases.



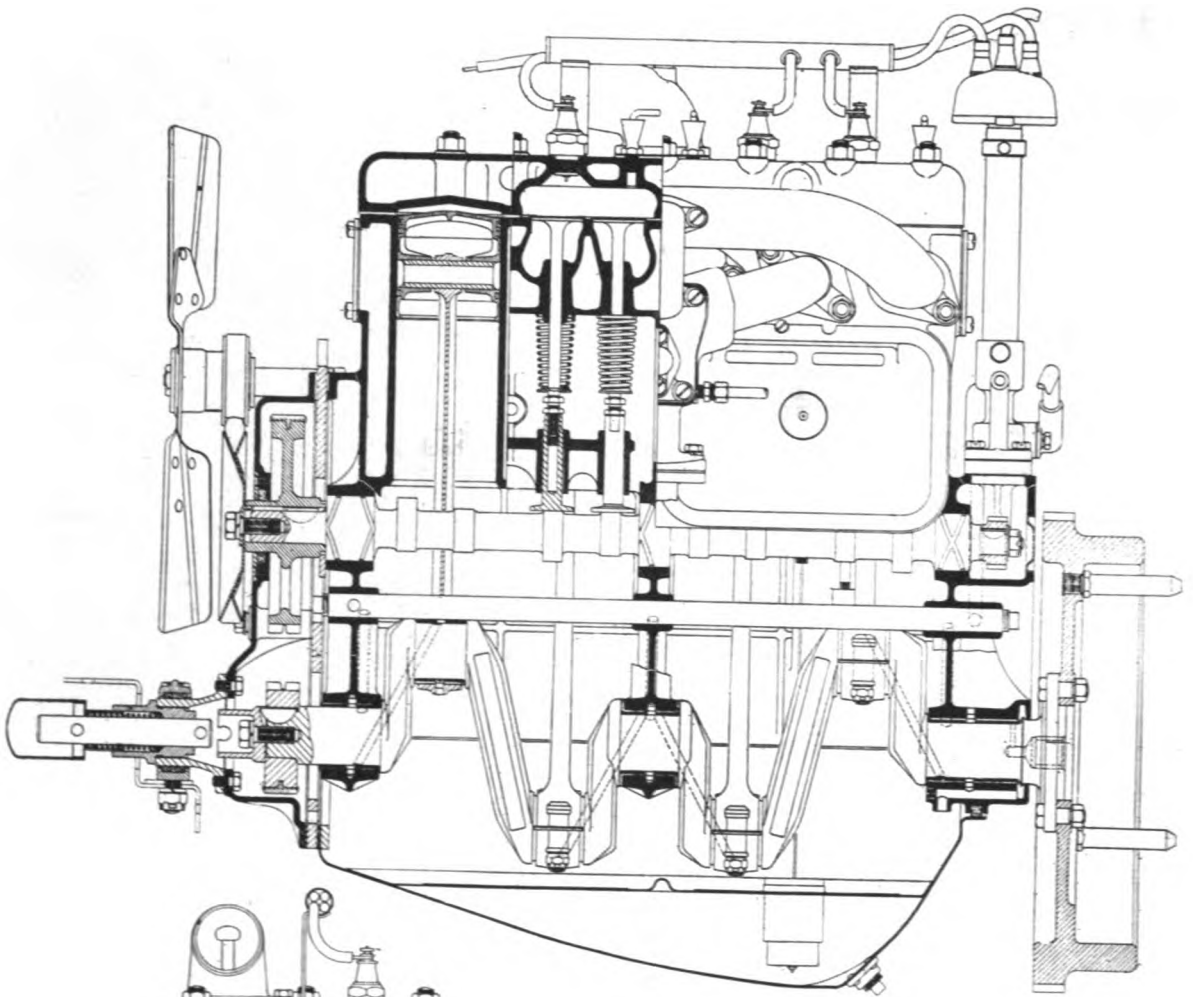
Above—Hupmobile Series R roadster, which has a seating capacity of three. Below—Side view of the Series R Hupmobile touring car. Both cars sell for $1,250

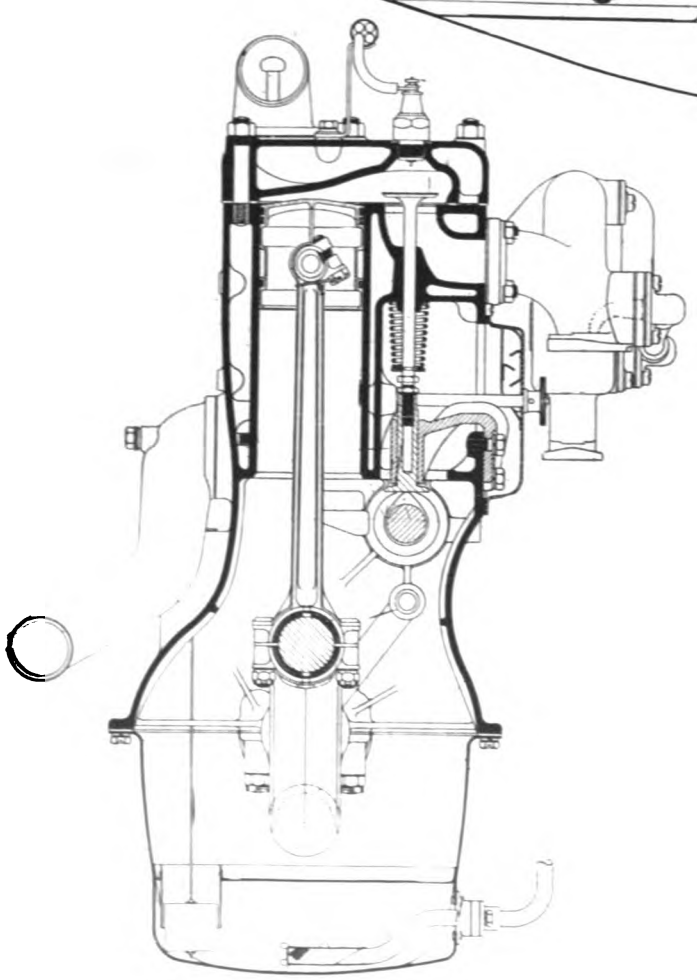
Standard equipment includes a Neverleak top, black exterior and tan interior. The curtains are the Bishop style, opening with the doors and folding into the top when not needed. The windshield is a rain vision, non-drip type, with overlapping top glass and ventilating lower glass. The speedometer is a Van Sicklen equipped with watch stem type resetting device. There is a gasoline gauge, motor-driven horn, ammeter, foot rail, robe rail, tonneau carpet, tire carrier, extra rim, pump, jack, tools and tire repair outfit.

Having been developed during a period when the material market has undergone a tremendous upheaval, this model represents the latest word in the automobile industry in securing maximum performance and at the same time bringing the price of the car into the field where production on a large scale can be maintained.

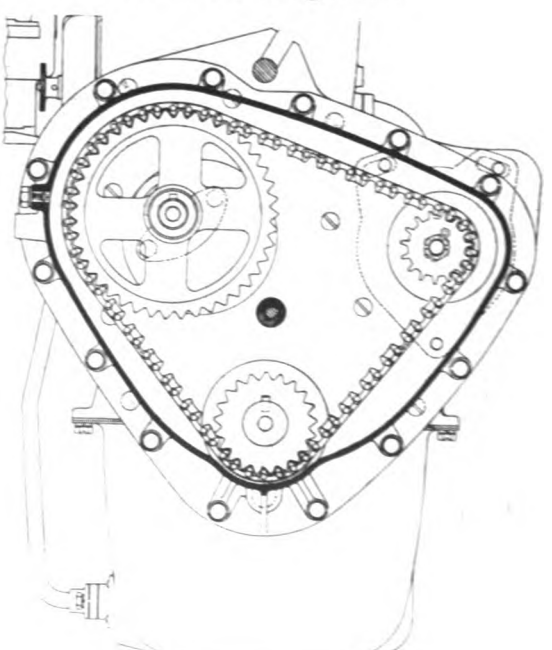
The car is now hung like the previous Hupmobiles, having no break in its lines from front to rear. The hood line is straight and merges directly into the side line of the car so that there is a

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How The Series R Hupmobile Is Put Together



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straight line from the top of the radiator to the back of the rear seat. The windshield is sloping and the finish on the hood, fenders and running gear is hard baked black enamel. The body is blue, of a somewhat brighter color than that used last year. The upholstery is leather in French plaits, fastened on all edges with a leather-covered moulding. The entire body is lined.

Throughout the car there are a number of features which are new to Hupmobile practice, and there are also other features which exemplify the trends in engineering development to take care of the problems presented by the present grade of fuel. Probably the most important development on the car is the complete hot air equipment to preheat the initial air entering the carbureter. In addition, the mixture itself is heated before entering the intake gallery.

A winter and a summer position are provided on the damper controlling the preheating of the primary air, allowing either all cold air or preheated air to enter the carbureter. Above the carbureter the intake is exhaust-jacketed, preheating the mixture before it enters the cylinder.

Another feature which is new is the manner of carrying the exhaust pipe away from the body. Precautions have been taken to have the driving compartment cool in the summer. The exhaust pipe is carried forward from the engine and brought around, well away from the body, so that there is no possibility of heat entering the driving compartment. In order to make it doubly sure that no engine gases can pass through the floorboards, an ingenious arrangement has been placed on the pedals in the way of rubber scaling disks, which are also shown in the sketches. These disks come against the bottom of the floorboards when the pedals are in the up position, thus acting as valves and shutting off the passage of any gases through the floorboards.

Bottom Pan Eliminated

An unusual feature is the elimination of the bottom pan, or plating, beneath the engine. The pan is carried back only for a short distance and then curved down in such a way that any mud which might be splashed from the front wheels is turned away from the engine. This also keeps the front compartment cool and aids in cooling the oil. The employment of vacuum feed in place of the cowl gravity tank used in the previous model eliminates any chance of the odor of gasoline entering the front compartment and also permits of an increase of 2 in. in leg room for the driver.

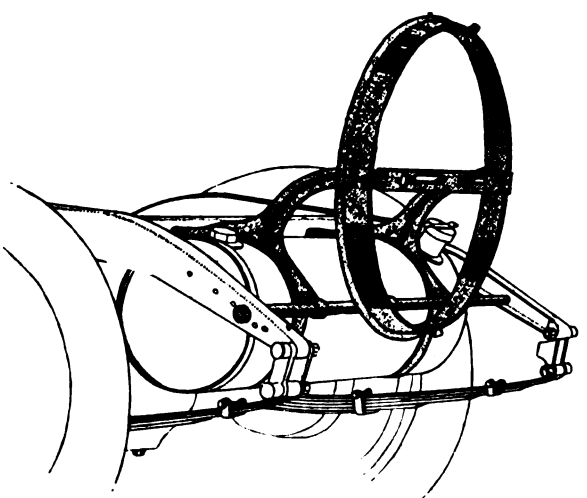
The powerplant is entirely new and is different in many respects from anything used in previous Hupmobile practice. Cylinders are block cast in unit with the crankcase. The head is detachable, this being a new departure for the Hupp company.

The water space is large around the valves. The hour-glass pistons are cast-iron and are light weight, with a ribbed section to maintain stiffness. Two rings are used, one in the top and one in the bottom below the wrist pin. The hollow wrist pin is .15-.25 carbon steel, heat treated and ground and clamped in.

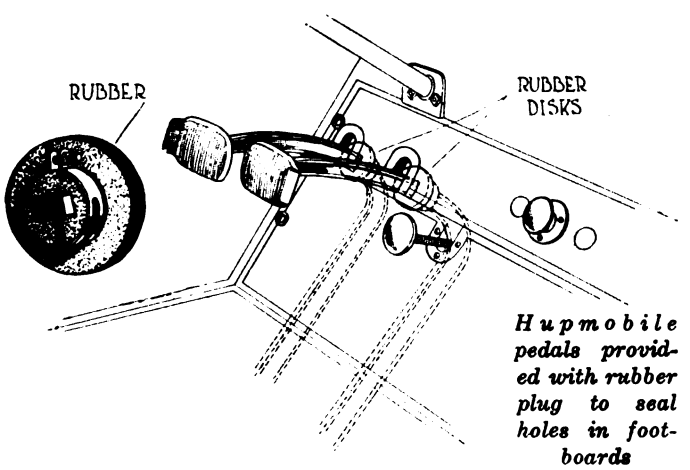
The crankcase casting also supports the engine. The front support, of the three used, is a special design with a packing included to absorb vibration. This packing is enclosed in a ring forming a part of the supporting member. Cylinder bores are ground instead of reamed.

Connecting-rods are .35 to .45 carbon steel I-beam drop forgings, machined for lightness and balance and having caps fastened with 2 7/16-in. bolts of 3½ per cent nickel steel; bearings are phosphor bronze, babbitt lined. The crankshaft is a .40-.50 carbon steel drop forging carried on three phosphor bronze bearings, having high-speed babbitt lining. The bearing sizes are: Front, 1⅞ in. long x 1 13/16 in. diameter; center, 1⅞ in. x 1 25/32 in.; rear, 2⅞ x 1¾ in. The crankshaft and flywheel are assembled together.

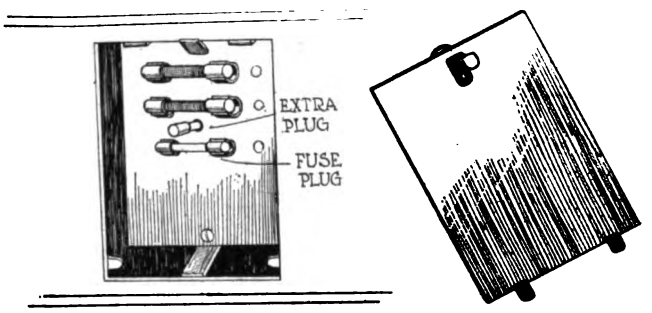
The camshaft is driven by silent chain



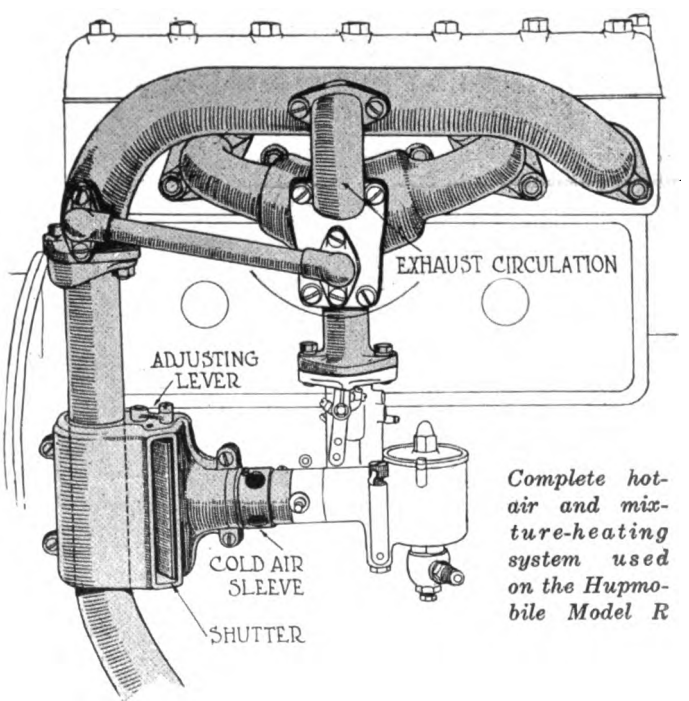
Rigid spare tire carrier and cross member on new Hupmobile Series R



Hupmobile pedals provided with rubber plug to seal holes in footboards

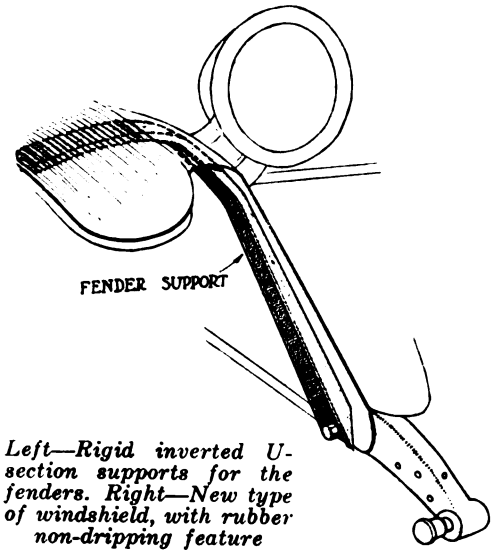


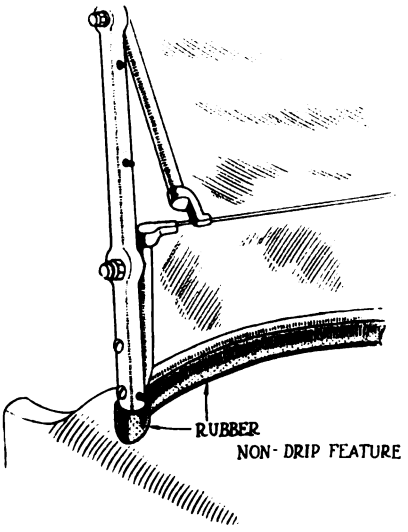
Hupmobile fuse box mounted on the dash, showing extra fuse



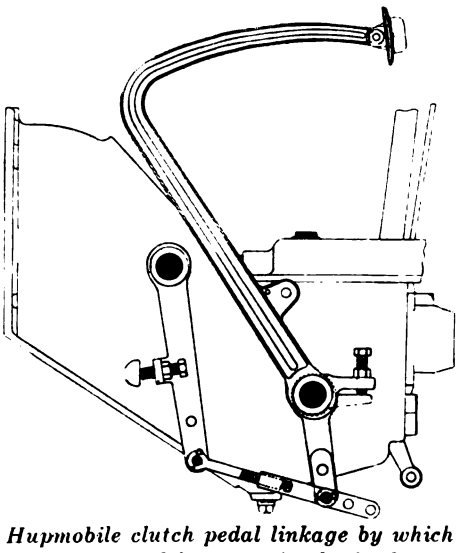
Complete hot-air and mixture-heating system used on the Hupmobile Model R

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Left—Rigid inverted U-section supports for the fenders. Right—New type of windshield, with rubber non-dripping feature



Hupmobile clutch pedal linkage by which increased leverage is obtained

contained in a casing in front. It is a drop forging of .15-.25 carbon steel, hardened and heat-treated, and is carried on three bearings. The valve followers are mushroom type, the tappets being hollow. Valves are alloy steel forged in one piece and have a diameter of 1⅝ in. Tappets are assembled with the guides as two units, and can be readily removed by taking off the valve cover plate and the cap screws which hold the assembly in place. The valve covers enclosing the valve action act as breathers, so that oil vapor breathed from the crankcase surrounds the valve action.

Lubrication Method New

Lubrication is by a pressure feed system of an entirely new design. There is no splash to any of the bearings. Oil is circulated by a gear pump driven from the camshaft. The pump is a gear type and delivers the oil directly into a long, horizontal lead which has independent feeders to each of the three main bearings. At the main bearings the oil enters the leads which are drilled through the crank cheeks, and through these leads is carried to the lower connecting-rod bearings. The leads are drilled directly through to the outside ends of the rod bearings, and from this point any excess oil which is thrown off lubricates the other internal bearings of the engine. The pressure is direct to the main and lower connecting-rod bearings, while the cylinders, piston pin, camshaft and tappets are oiled by the lubricant thrown from the crank bearings.

The camshaft chain is lubricated by overflow from the oil pressure relief valve. A strainer is placed in the oil pan below the connecting rods so that all the oil dropping back to the reservoir must pass through it, and an oil pressure gauge is carried to the instrument board. The level of the oil in the crankcase is indicated by a float type of gauge which is visible on raising the hood.

Gasoline is fed by a Stewart-Vacuum system, the lead-coated sheet-steel tank being at the rear. It has a capacity of 15 gal., of which 2 gal. are reserve. There is a gauge on the gasoline tank and a fuel strainer screen on the tank end of the pipe lining. From the Stewart vacuum tank the gasoline flows by gravity to a Stromberg carbureter.

Ignition is by the new Atwater Kent closed circuit battery system. The coil and distributer are both located in the rear of the engine, where they are in a protected position, and the wiring is carried from the distributer to the spark plugs in a metal container. The ignition switch is combined with the lighting switch on the instrument board with a lock.

Cooling is by thermo-syphon. The radiator and motor combine have a water capacity of 5½ gal., and the fan is a two-blade airplane type running on ball bearings driven by a V-belt from a pulley wheel mounted on the end of the camshaft. There is a sliding tension adjustment.

For lighting and starting the two-unit 6-volt Bijur system is used. Wiring is the grounded return type. The generator is driven by a silent chain from the crankshaft, chain tension being adjusted by rocking the generator.

The automatic cut-out relay switch is in a sealed box on the end of the generator. The Bijur starting motor is mounted in the clutch housing. The starter engages the flywheel by means of an automatic screw shift connection, electrically operated. With this mechanism the starter is disengaged even though the pedal is held in place.

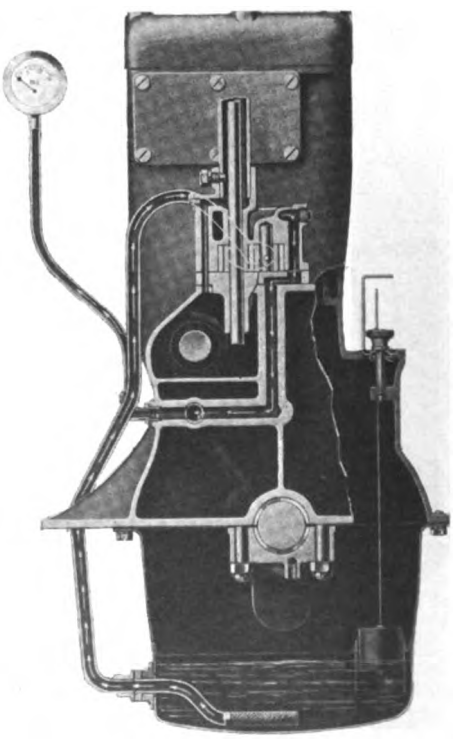
Instrument Lamp Has Individual Switch

There are two fifteen-candle power headlamps, tail lamp and instrument lamp. The instrument lamp has an individual switch so that it may be turned on and off independently. The fuse box is also located on the instrument board and there is space for a spare fuse which is furnished with the car. The battery is a Willard 90 amp. hr.

Clutch and gearbox are a unit bolted to the powerplant. The housing, when bolted to the rear flange of the engine, forms practically a unit powerplant. The clutch is a dry disk type having seven steel plates faced with asbestos fabric and operated by six springs. The clutch is a dry type, with the parts enclosed in the housing. The clutch pedal is so arranged as to give a very light action and it is adjustable for length of movement, position and pressure. The clutch shaft is operated on annular ball bearings. The gearset has three speeds forward. The gearbox has ball bearings on the spline shaft and plain bearings on the countershaft. The gearbox has been lowered, bringing the top on a level with the floorboards, giving more foot room and clearing out the front compartment.

Unusual Shifter Lever

Another unusual feature which distinguishes the shift is in the length of the shifter lever, which is a cane type, 24 in. long, bringing it in close proximity to the driver's hand. The emergency brake lever which is carried on the side of the



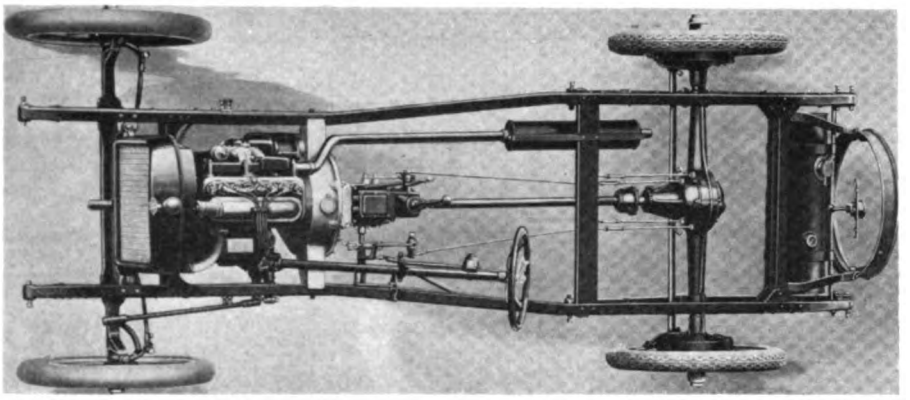
Cutaway view of engine, showing course of oil in the new pressure feed

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gearbox provides an unusual powerful leverage, and a feature of the lever is the ease of operating the latch to disengage the brakes. From the gearbox the drive is taken through two universals and a tubular propeller shaft, 1⅝ in. in diameter.

The rear axle is floating, having chrome nickel steel shafts 1¼ in. in diameter. The wheels are attached to the shafts with a taper, fits and keys, and the driving gears are the spiral bevel type with a ratio between the ring gear and the pinions of 4.91 to 1. The pinion bearings are taper rollers and the gear and shaft bearings are Hyatt, with chrome nickel steel rollers and hardened and ground races. The thrust components are taken by ball thrust bearings.

Conventional design is used for the brakes, there being two sets on the rear wheels. The external brakes are used for service and they are 12 in. in diamter by 2 in. wide; the hand brake is 11 11/16 in. diameter by 1¼ in. wide. All brake linkage rattles are guarded against by spring tension on all bearing spaces.



Plan view of the Series R Hupmobile chassis, showing layout of driving members and brake linkage and simplified tapered frame

Underslung rear springs are used, both front and rear springs being semi-elliptic. The front springs are 36 in. long and the rear springs 51 in. long. On the rear spring the main leaves are of chrome vanadium steel and all the other leaves are chrome steel alloy.

A Jacox steering gear is used, this being worm and nut type and irreversible. The bearing surface is composed of a hard steel worm against a semi-steel nut. The housing is malleable iron.

Colorado "Oldsters" Enjoy 1000-Mile Mountain Run

AN important part of a dealer's service is to see that his customers enjoy their cars to the fullest possible extent, believes W. W. Barnett, Oldsmobile distributer for Colorado and adjacent territory.

One way is to conduct a tour for owners, similar to the 1000-mile mountain trip just finished by a dozen Oldsmobile owners of Denver and vicinity, with families and friends. There were 40 people in the 12-car party, and the trip took 9 days.

The event was the second annual sociability run of "Oldsters," and covered about three times the distance of the 3-day run last year. It took in Colorado Springs and other points in the Pike's Peak region, Cañon City, the Royal Gorge, Salida, Poncha Pass, Saguache, Del Norte, South Fork, Wolf Creek Pass, Pagosa Springs, Durango, Mesa Verde National Park, Silverton, Red Mountain Pass, Ouray, Montrose and Gunnison, with return to Salida over Monarch Pass, 11,650 feet high, the highest motor road pass in Colorado.

The Oldsters were entertained by Barnett at a lunch in Colorado Springs, served at the home of the late General Palmer. Their host then left the party in charge of his salesmen, as he was compelled to return to Denver to continue "doing his bit" as a member of the Military Exemption Board.

The main point of attraction was the Mesa Verde National Park, in the southwestern corner of the State, with its cliff-dwellers' ruins representing a civilization as old as that of ancient Egypt. There the tourists explored the Cliff Palace of some 300 rooms, the Balcony House, Sun Temple, Spruce Tree House, Far View House and other relics indicating a high degree of skill possessed by that prehistoric people of brick and pottery achievements.

The personal expense of the trip, outside of the small cost of car operation, averaged about $25 to $30 a person.



The Oldsters going through Wolf Creek Pass, the newest one in Colorado's Rockies



From Durango to Silverton, cars and drivers were put on a freight train to return by a different route

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Editorial Observation

The New National Dealers' Association

SEVERAL months ago in Chicago a new national association of dealers was formed, called the National Automobile Dealers' Association. The other day it held a meeting of its board of directors. It is getting under way with its plans. Two problems have come up.

One was that the dealer who was not a member of a dealers' association could not join. The by-laws have been or will be so changed that the scope is widened. This will permit a larger membership.

Another problem is the understanding about this association throughout the trade. At the start some folks got an idea that the dealers were going to fight the manufacturers, that they were going to make all sorts of demands as to contracts and that it was an organized opposition to the manufacturing interests.

The new association has had some difficulty combating that idea, and in order to clarify the situation Motor World wishes to add a word of its own, which is this:

The founders of the association did not start out to fight any part of their own trade. They do not believe in fighting the factories. They know nothing would be gained by such a broil. They know such a fight would do a lot of harm and no good.

At the organization meeting one speaker suggested fighting the factories, but he was promptly sat on. The association stated that it might have certain questions to take up with the manufacturers—just the same as the manufacturers have some questions to take up with the dealers—but that the only way to get anywhere was to get all divisions of the industry together in a spirit of co-operation and work out trade problems.

Wouldn't it be a silly thing for any section of the trade to start a foolish fight without reason? Wouldn't it be absurd to shout: "We're going to fight!" until it is found out what the fight is about? Isn't it a lot better to start in a spirit of harmony and have a little teamwork among manufacturers and dealers?

To start a fight needlessly would not be good business—and there are some pretty good business men at the head of the new association. The idea is just a trifle absurd. Furthermore the dealers in the movement long ago expressed themselves as unwilling to have anything to do with the organization if it starts out to become a manufacturing-fighting outfit.

So let every one—both dealers and manufacturers—forget this "fight" idea. Nothing to it! The dealers hope to get the full co-operation of the manufacturers and the N. A. C. C.—and they should get it.

This is no time for fights. If anyone has any fight in his system let him take it out on the Kaiser.

To Keep the Engine Clean

MOTOR car manufacturers have been slow in adapting air washers to their carbureters. In the truck field, owners are demanding air washers, and it appears only a matter of time when some manufacturer will incorporate an air washer as standard equipment. It is not uncommon for truck-users to find a deposit of dust ¼ in. thick on the inside of the crankcase, together with leaves and other foreign substances that have been drawn in through the carbureter. The increased wear on the parts due to the entrance of foreign matter is apparent.

There are at present three distinct types of air cleaners on the market, each possessing merit, and each supplying clean air to the engine. In the first all of the air is passed through a water bath, and the dust and dirt washed from it; in the second, the dust is removed by centrifugal action, and in the third the air is passed through a chamber in which are baffle plates covered with a dust-retaining material. None of these devices are experiments, but are carefully developed and tested products.

However, it is not sufficient to provide an air cleaner at the intake manifold alone. Dust can likewise enter the crankcase through the breather pipes, and some means to prevent this should be provided. Some truck owners simply tie a muslin bag over the breather pipe. The manufacturer can render this unnecessary by placing a small flap valve at the top of the breather tube, or by providing a fine mesh screen that will entrap the dust.

It is in the truck field that the need of an air washer is most evident at the present time. But it is no less necessary in the passenger car field, because it will reduce maintenance costs and prevent oiling troubles.

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What Others Think

THIS page is for the use of MOTOR WORLD readers with something to say. Letters on subjects of interest to dealers, garagemen, repairmen and jobbers are always welcome—especially if they are timely and brief.—THE EDITOR.

Here's a Plan Worth Trying

Editor Motor World: At our monthly organization meeting our discussion was on this subject, "How Can We Settle in Advance Our Customers' Kicks on Repair Work?"

Of course the answer is easy—by doing the work right in the first instance. There we bump up against the personal equation.

The meeting was attended by our salesmen, managers of our various work departments such as general shop, inspection shop, paint shop, trim shop, parts department, etc.

The consensus of opinion was that the proper spirit can be instilled into shop workmen only through and by education. Various ways and means were suggested and I do not want to burden you with them because they will readily suggest themselves to you. However, I enclose a "starter"—a letter (shown below) which we have addressed to each man in our service departments, of which there are about fifty, and delivered today through the medium of the pay envelopes.

I think this is a very important matter and would like to see you make it the subject of some articles or editorials, if consistent. I am sure that Motor World wields an immense influence among the garagemen of the country, and the sooner we, ourselves, realize that the old day of simply "getting by" is passed the sooner will our customers begin to accept our charges as correct and pay their bills.

Our service meeting has also adopted a bonus plan as follows:

Two per cent of the repair bill to be paid to the men working on the job provided the bill is paid without the necessity of issuing credit to the customer on any part of the work. This will distribute about $3.50 a day extra into the repair department.

A flat bonus of 10 cents is paid for each inspection job when there is no "come-back" of any kind on the job. On such jobs we make no charge for labor under the Cadillac plan of free monthly inspections.

A flat bonus of 5 cents is paid to car testers for each job tested on which there is no "come-back" of any kind. We employ two testers, who must O.K. jobs before delivery. They are NOT the men who work on the jobs.—Cadillac Motor Co. of Denver, P. E. Chamberlain, General Manager.

THE LETTER TO THE SHOP MEN

You've heard about the old judge in the little Missouri town, who was also the cashier of the bank. One day a traveling man found himself broke and tried to get the judge-cashier to give him the money on a check he carried from his house in St. Louis. He showed letters, lodge cards, personal cards, name on his baggage and everything else he had with which to identify himself, but there was nothing doing. The judge wouldn't cash the check.

Finally, getting sore, the traveling man said, "Hell, judge, I've known you to Lang a man on less evidence than that."

"Wal," said the judge, "I know it. But this here is business."

Boys, it's like that with our repair department. It isn't a "game." It isn't a case of just "getting the money."

IT'S BUSINESS!

What makes you boost any merchant to your friends? It's because you know he sells good goods. More than that, he WANTS to sell no other kind. If you happen to buy a poor article the firm immediately MAKES GOOD to you. That's the only thing any RELIABLE house can do.

This company is a merchant. It sells skilled time. If the time we sell turns out to be unskilled—if the job is not properly done—we MUST make good to the customer.

We pay you so much an hour. To this we add our overhead charges such as rent, light, heat, cost of tools, etc., and a profit—which every merchant is entitled to and must have on his investment. This determines our charge to our customer.

If you have done a good job everything is lovely. You get your money, we pay the rent and the customer gets what HE paid for. But if your work is NOT good you have caused the company to sell its customer POOR goods when he paid for GOOD goods. We have to make good to HIM.

But who makes good to us? You sold us your BEST EFFORTS. You didn't deliver the kind of goods the boss paid for.

Did you ever hear of a merchant getting anywhere in a business way on a policy of "get the money—to blazes with the customer"? The company you work for is YOUR CUSTOMER.

Are YOU going to deliver to your customer the kind of goods he is paying you for—THE BEST YOU HAVE?

Not the Wallis Tractor

Editor Motor World: It has recently come to our notice that manufacturers and investors are being solicited to lend their support, financial and otherwise, to the formation of a tractor company. In this solicitation we are told blue prints of the whole or parts of the Wallis tractor are being shown with the purpose of leaving in the prospect's mind the idea that the whole or part of this tractor is to be the product of this new venture. It is further intimated that this is with the consent of the Wallis Tractor Co. Will you please give conspicuous notice in your columns to this denial, as there is to-day no one authorized to use any information on Wallis tractors for the furtherance of such a scheme?—J. I. Case Plow Works, Frederick R. Pettit, vice-president and general manager, Racine, Wis.

Detroit Branch for Haynes

CHICAGO, Nov. 10—The Haynes Motor Car Co., Kokomo, Ind., is opening a factory branch at Detroit, with C. L. Watson, formerly assistant general manager at Kokomo, in charge. Heretofore the Loveland Co. has represented Haynes in Detroit.

"—let things go hang for a while"

WHEN you come to the end of a perfect day, where everything's gone dead wrong, do you begin to think that work don't pay, and that life is far from a grand, sweet song? When the steno you've trained to your thinking has suddenly thought she would wed, and left you buried there blinking, with letters piled over your head— But you break out for your usual sales meeting, as per schedule you keep, and only three respond to your greeting, and before you are through they're asleep—and you find one that sure is a green one, all full of earnest desire, and he states "In closing a mean one, I just had to throw in a tire." Then in comes the usual old vixen, who in your town is a power, and she claims that her car needs afixin', and talks about squeaks for an hour. Next the aunt of your wife's old maid sister drives in with a worn-out sedan, and immediately after you've kissed her, she wants a trade on a time-payment plan. Do you think that it is a question whether thought and hard work really pay? Why, man, you've just got indigestion, and you'd better lay off for a day. Cut out the rush, and cut out the hurry, let things go hang for a while, just let the other fellow worry, and then duff in again with a smile. —S. T. WILLIAMS.

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The RETAIL NEWS

EAST

United Auto Sales Co., Baltimore, Studebaker and Garford distributer, has added a service station to its plant to take care of the truck business.

William J. Tickner & Sons, Baltimore, have added a tire shop to their garage, the largest in the city.

M. F. W. Weidemyer, proprietor of Lafayette Garage, Baltimore, has become the local distributer for the Permalite Storage Battery Co.

Seitz Auto Co., Baltimore, has absorbed the Rittenhouse-Seitz Co., Service and Velie distributers. J. P. Seitz is president.

Bowers Motor Co., Royston, Ga., has opened a garage and service station.

SOUTH

Martin Bros., Athens, Ga., have opened an automobile top and recovering shop. They will also do repairing. P. J. Neel will have charge of the enterprise.

J. R. Coe, Tallahassee, Fla., has established a steam vulcanizing plant on the second floor of the Ford Garage Building. Mr. Coe will have charge of the plant.

James L. Sibley, Jr., & Co., Milledgeville, Ga., has been sold to T. Hines Ennis, who will combine it with his recent purchase of the R. H. McComb Auto Co.

Augusta Vulcanizing Co., Augusta, Ga., Arthur Cheney manager, is now occupying its new quarters in that city.

Standard Oil Co. is erecting a retail service station at Tifton, Ga., at a cost of $2,500.

Cocoa Garage & Machine Co., Cocoa, Fla., has been incorporated by D. St. Clair Nisbet of Indianola, Fla., with a capital stock of $10,000.

New Garages

O. M. Morgan Motor Co.....Springfield, Ga.
Guarantee Garage.....Pensacola, Fla.
Walker & Bryan.....Kissemee, Fla.
Exposition Cotton Mills ($2,000).....Atlanta
Marshall Prevost (100 x 102, $15,000)
Greenville, S. C.
Overland Palmetto Co. (50 x 115, $8,000)
Walterboro, S. C.

MIDDLE WEST

Michigan Auto Co., Calumet, Mich., Chalmers, Apperson and Saxon dealer, is building showrooms, service station and garage, three stories, 58 x 100, on Sixth Street between Elm and Pine.

Lake Drive Auto Co., Grand Rapids, Mich., has opened a top trimming department and will supply slip covers for Cadillac, Packard and Dodge cars sold by the Valley City Motor Co. on special order.

Electrical Testing Co., Peoria, Ill., has disposed of its Bloomington branch to J. M. Walton, of Kewanee, and J. C. Pemberton, of Bloomington.

Central Auto & Supply Co., Jackson, Mich., is now located in its new Ford garage and salesroom.

Electric Sales & Service Co., Toledo, Ohio, has discontinued its electric boarding garage and is to concentrate on Detroit Electric sales and service.

Wharton Light & Garage Co., Wharton, Ohio, Ford dealer, has just moved into its new showroom and garage, 50 x 110 ft., which cost $7,000. Accessory store and repairshop are operated in conjunction.

F. A. Whiting, Berlin, Wis., Buick dealer, has leased his repairshop and service station to Harvey R. Ziebell, formerly of Milwaukee, Chicago and Indianapolis. The garage will be enlarged early in 1918 to provide more room for the shop.

Appleton Overland Co., Appleton, Wis., Overland and Willys-Knight dealer, is rebuilding its garage and service building at 973 College Avenue and erecting an addition.

The Palace Garage, Marshfield, Wis., has disposed of its repair business and leased its shop to Frank Mullenbach, Leo Holch and Gustav Laschinski. Mr. Holch will consolidate his present shop with the new Palace Garage.

Matthews-Neitzel Co., Milwaukee, has been organized by A. C. Neitzel and M. L. Matthews to become a Ford dealer in the city of Milwaukee, and has opened a garage and service station at 1130-1136 Teutonia Avenue.

Bock Auto Co., Black River Falls, Wis., has installed a Bowser 1-gallon stroke pump of the latest type.

Fred W. Mott, Bloomington, Ill., has opened a garage at 213 East Douglas Street and will do a general repair and storage business.

C. F. Stout, Fairview, Ill., has opened a a new garage and sales agency. He will do a general repair and storage business and carry a line of accessories.

W. E. Ludwick, Moline, Ill., has opened a new garage. The former plant at 1521 Sixth Avenue has been abandoned.

T. L. Gillette, Charlotte, Mich., has purchased the interest of Clyde Phillips in the garage on East Lawrence Avenue and becomes a partner of H. H. Bryan.

Frank Clark, Bellevue, Mich., Ford salesman, has purchased of W. R. Jones the new garage on South Street.

Cass Groat, Detroit, has purchased the Ford garage at Williamston, Mich.

Hackett Motor Sales, Grand Rapids, Mich., is the name of the new Hackett distributing agency and service station that will be opened here soon at 112 Louis Street. Ted Arntz will be general manager.

A. F. Wyman, Sandusky, Ohio, has purchased a garage from L. A. Jones in Bancroft, Mich.

Three Rivers Garage, Three Rivers, Mich., operated by J. C. Hackenburn, will move to the building where the Speese Auto Sales Co. has been located. The building will be enlarged and remodeled and an attractive display room for the Overland cars will be made.

C. B. Habecker and Theodore Zuercher, Eureka, Ill., have purchased the Ford agency, conducted by H. E. Frerichs, and the Overland agency, conducted by J. E. Unsicker, known as the Eureka Auto Co., and the two have been consolidated under the name of the latter, while the plant owned by Unsicker will be occupied by the new firm. Mr. Unsicker will retain the agency of the Overland and Hudson cars and will rent offices and a sales room from the new firm. Mr. Frerichs will give up the motor car business and will seek another line. Habecker & Zuercher will retain the Ford agency and do a general repair and storage business.

Harry Stenson, formerly Ford agent at Oak Harbor, Ohio, has purchased the Standard Garage at Port Clinton, Ohio, where he will handle the Ford and run a garage and repair business.

M. & S. Electric Co., Milwaukee, has opened a shop at 1209 Layton Boulevard for the care and repair of electrical equipment, storage batteries, tire repairs and general repair work on motor cars, trucks and gasoline engines. A. C. Mantel and O. E. Stark are the proprietors of the company.

American Automobile Co., 187 Wisconsin Street, Milwaukee, distributer of the Pierce-Arrow, will erect on Van Buren Street, just south of Wisconsin Street, one of the finest display room and service buildings in the Middle West. The building will be three stories, with part basement, 75 x 120 ft. in size, of fireproof construction, and cost about $75,000 complete. A. E. Raffauf is president and treasurer of the company.

Kansas Motor Car Co., Wichita, Kan., has opened new quarters in the Skaer Building.

J. T. Veach, Chanute, Kan., has bought the Palace Garage from Harmon Bros.

R. E. Graham, Burlington, Kan., who formerly ran the Third Street Garage, is there to take charge of B. D. Hanreld's new Ford garage on Fourth Street, which is practically completed.

B. O. Neptune, Belleville, Kan., has bought the garage of H. Teasley.

Gregg & Gregg, Belleview, Kan., have bought the Willard electric battery plant and equipment and have moved into new quarters.

J. W. Dearinger, Paola, Kan., has opened an auto repair shop.

New Garages

Athens County Buick Co.....Athens, Ohio
Marion Buick Co.....Marion, Ohio
The Sturtevant-Jones Co.....Toledo, Ohio
R. H. Fyfe Co.....Detroit
American Motor Sales Co.....Detroit
Fred L. Ellis.....Canton, Ill.
O. L. Langellier.....Lincoln, Ill.
The Baldon Service Station.....Quincy, Ill.
C. B. Williamson.....Rockford, Ill.
Fanning & Gerber.....Carlinville, Ill.
Wemple Tractor Co.....Springfield, Ill.
R. B. Shaw.....Decatur, Ill.
Lucia Bros. Motor Car Co. (125 x 160)
Green Bay, Wis.
Tanner Buick Co. (60 x 120)
Stevens Point, Wis.
Whiting Buick Garage (addition 40 x 50)
Berlin, Wis.
Dodge Bros. (50 x 110).....Cambria, Wis.
E. N. Mathoushek (60 x 90).Milwaukee, Wis.
W. H. Stewart (70 x 80).....Delavan, Wis.
Schweers Hardware & Auto Co. (40 x 177),
Shawano, Wis.
Johnson-Fortnum Co. (addition).Berlin, Wis.
Tank Bros. (50 x 120).....Rhinelander, Wis.
J. P. Stotter Co. ($50,000).....Cleveland
H. W. Kanouse (95 x 102, $21,000)...Detroit
James H. McDonnel.....Detroit
George Metz (addition, $2,500).....Detroit
Holleman & Deweerd.....Zeeland, Mich.
Guy Raymond.....Mt. Pleasant, Mich.
Henderson Garage.....Grand Rapids
Kinsey & Buys.....Grand Rapids
Frank Geier (40 x 120).....Sauk City, Wis.
Ernest Rogers.....Medford, Wis.
Melli-Blumberg Co. (50 x 125)..Chilton, Wis.
M. O. Lind (45 x 120).....Hillsboro, Wis.
Reitman-Straus Co. (70 x 170)....Milwaukee
Ideal Service Station (addition 40 x 40)
Hartford, Wis.
J. A. Pesch & Son (addition 40 x 60)
Campbellsport, Wis.
L. F. Schoellkopf.....Mazomanie Wis.
Arnold Schmidt.....Oakfield, Wis.

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Elmer Nelson.....Rantoul, Ill.
Service Garage.....Decatur, Ill.
L. W. Cook.....Decatur, Ill.
Bollhorst Bros.....Ashland, Ill.
Sweeney & Mehl.....Decatur, Ill.
John Mortenson.....Galesburg, Ill.
L. P. Hallady Co.....Streator, Ill.
J. B. Vanpreter.....East Alton, Ill.
W. A. Kreitzer.....Gibson City, Ill.
Henley Cain.....Whitehall, Ill.

SOUTHWEST

Firestone Tire Service Co., Dallas, has completed its new home at 2015-2017 Main Street. It is one of the handsomest buildings on automobile row.

J. F. Roark, M. Boyd Keith and C. B. Jackson, Dallas, have formed a company and capitalized for $50,000. It will be known as the Texas Truck & Body Co. for the distribution of Apperson cars, Truxton trucks and Parry commercial bodies.

McLarty Motor Co., Dallas, has moved into its new quarters, 1715-1717 Commerce Street.

Ray Rose Co., Dallas, distributer, has moved into its new building, 2016-2018 Main Street.

S. G. Davis Motor Car Co., Oldsmobile distributer, has completed an addition to its Commerce Street house for carrying a complete line of parts. It is carrying a $25,000 stock in parts for the Texas trade.

J. J. McCook Motor Car Co., Dallas, organized only a few weeks ago for the distribution of Regal cars, suffered a heavy loss by fire last week. All cars on display were burned. The company is continuing business, however, in a new building at 2032 Commerce Street.

Texas Oakland Co., Dallas, has completed extensive improvements at its plant, 1915-1917 Commerce Street.

Republic Motor Truck Co., Dallas, Republic distributer, has moved into its new home, 112 North Jefferson Street.

The Pennsylvania Rubber Co., Dallas, has moved to its new home, 1504 Young Street.

Ardmore Akron Tire & Rubber Co., Ardmore, Okla., has opened an office.

W. M. Spencer, Quay, Okla., has bought the local garage.

J. S. Potts, Durant, Okla., has bought the garage of C. L. Cooper.

Fife & Cheek, Blackwell, Okla., have succeeded Butler-Slaughter Motor Co. in the ownership of the latter's garage.

W. A. Caldwell, Lawton, Okla., is opening an automobile repair shop.

Walter Krouse, Wichita, Kan., has bought the Hobart Garage.

J. O. Surrels, Wapanucka, Okla., has bought the garage of Maytubby & Hines.

Miller Automobile Co., Percy, Okla., has bought the stock of Harry Keeler and employed Mr. Keeler as manager of the Delco light department.

A. H. Hartman, Oregon, Iowa, has bought the garage of T. F. Donnelly.

New Garages

A. E. Mayhew & Son.....Effington, Kan.
Arthur Peterson.....Scranton, Kan.
Fred Warsop.....DeSoto, Kan.
Dodge City Tire and Repair Works, Dodge City, Kan.
E. W. Davis.....Morrill, Kan.
W. L. Blaylook.....DeSoto, Kan.
Somger & Rowe.....Severy, Kan.
D. A. Mitchell.....Douglass, Kan.
A. C. Rabb and Fred Parks, Kansas City, Kan.
Miller & Schroder.....Topeka, Kan.
J. H. Fry.....Thomas, Okla.
Stapleton Motor Sales Co., Oklahoma City, Okla.
McClelland Gentry Motor Co., Oklahoma City, Okla.
Tulsa Automobile Corporation..Tulsa, Okla.
Ben Lahr.....Tulsa, Okla.
Williams & Drake.....Woodward, Okla.
H. B. Boyd & L. J. Reed.....Picher, Okla.
H. E. Miller, F. H. Babbs, J. L. Fleeman, Stockton, Mo.
J. J. Dunoven.....Stark City, Mo.
Wallace Hobart.....Tulip, Mo.
C. B. McFarland.....Butler, Mo.
W. R. Alexander.....Houstonia, Mo.
Bart Miller.....Denver, Mo.
Vincent & Bruner (addition)...Burns, Kan.
Jefferson Highway Garage...Wagner, Okla.
L. L. Parrish Motor Co.....Larned, Kan.
Northwestern Motor Car Co....Atwood, Kan.
C. Y. Brown.....Greensburg, Kan.
Vincil Auto Co.....Independence, Kan.
Barnett & Rockline.....Cuba, Mo.
King Auto Sales Co.....Hiawatha, Kan.
Fay & Traynor.....Dodge City, Kan.
L. B. Leach.....Wamego, Kan.
J. A. Mann.....Cottonwood Falls, Kan.
C. P. Miller.....Sabetha, Kan.
Hawley Brothers .....McPherson, Kan.
John Hoover .....Hamilton, Kan.
Benton & Martin.....Harper, Kan.
Ruttan-Winslow Garage Co..Grainfield, Kan.
C. E. Bailey.....Douglas, Kan.
Herman Wentzig.....Junction City, Kan.
Michael Poell.....Hanover, Kan.
C. E. Radcliffe.....Dexter, Kan.
Edward Lewis .....Talmo, Kan.
Willis & Green.....St. John, Kan.
Overland Sales Co.....Emporia, Kan.
R. A. Brown.....Manhattan, Kan.
Freel & Frager.....Corning, Kan.
Campbell & Lachenmaier..Miltonvale, Kan.
Johnson & Grant.....Topeka, Kan.
L. R. Tripp.....Meriden, Kan.
Glenn Motor Car Co.....Kansas City, Mo.
Frank Stover .....Belleville, Kan.
Charles Hill .....Independence, Kan.
Topeka Buick Co.....Topeka, Kan.
Martin Schropp .....Washington, Kan.
Eckhardt-Overland Garage Co.Hanover, Kan.
Cannon Motor Co. ($20,000), Kansas City, Kan.
Acme Garage Co. ($18,000)....Wichita, Kan.
Ramsey Motor Co.....El Dorado, Kan.

NORTHWEST

Gilmore Garage, Shenandoah, Iowa, has been consolidated with the A. F. Woodward Garage.

Ernest Adamson, Fullerton, Neb., has bought a half interest in the Zuther Garage at Lynch, Neb.

John Holmstedt, Fullerton, Neb., has bought the interest of Charles Lyons in the Loup Valley Garage.

Havener & Son, Gordon, Neb., have repurchased the City Garage from Del Parker, to whom they sold it a year ago.

William Ernst, Grand Island, Neb., has bought the garage of C. C. Gilbert at Schuyler, Neb.

Ralph Harrison, Coon Rapids, Iowa, has bought the interest of his partner in the Harrison Garage.

C. Johnson, Shelby, Iowa, has bought the Independent Garage of Watt & Norris.

A. C. Van Horne, Broken Bow, Neb., has bought the Templin Bros. & Wozney Garage.

Samuel Buckingham, Fremont, Neb., has closed out his garage and repairshop and retired from the business.

Glen Dunlap, Homer, Neb., has bought the Ideal Garage from William Odell.

Bredehoft Bros., Berlin, Neb., have bought the interest of a third partner in the Berlin Light & Auto Co., Otis E. Irland retiring from the firm.

C. S. Prime and L. E. Chadderdon, Holdrege Neb., have bought the Hanson Motor Car Co. Garage.

Abraner & Krumwide, Roseland, Neb., have bought the garage of Cole & Helmer.

Frank Thomas, Buffalo, Minn., bought the A. H. Shelby & Son Garage.

Lloyd & Glas Olinger, Castle Rock, Minn., bought the T. C. Dillery Garage.

C. K. Sullivan, Ironton, Minn., bought the Herman Hunter interest in the local garage.

Wolf Point Garage, Wolf Point, Mont., has been sold to **Monroe Bros.**, Williston, N. D.

Oscar Iverson, Jeffers, Minn., has bought the Harrison interest in their garage.

Carl Vestre, Mayville, N. D., bought the Ford Garage and is fitting it with a repair outfit.

Walter A. Tesch, Hutchinson, Minn., retired from Thompson Bros. & Tesch, a machineshop and garage firm, and bought the Peterson Bros. Garage.

Watkins Garage, Watkins, Minn., is being enlarged.

Haldeman Garage, Indianola, Iowa, was damaged by fire, seven motor cars being destroyed.

H. W. Heath, Gilmore City, Iowa, has sold his garage to Will Hayes and will move to Sioux City.

Jack Rasmussen, Gilmore City, Iowa, has sold the Gilmore City Garage to Carl Lewis.

W. J. Naughton, Marshaltown, Iowa, has bought the Parnell Motor Co., Parnell, Iowa.

Selderman Bros. & Hayes, Lamotte, Iowa, had their garage damaged by a fire which destroyed eight cars.

F. E. Branch, Storm Lake, Iowa, has purchased a half interest in the Waukee Automobile Co., Waukee, Iowa.

Kirgis Auto Co., Perry, Iowa, will open an Exide battery service station.

C. A. Young, Low Moor, Iowa, has sold his garage to H. H. Blake.

S. A. Miller & Sons, Spencer, Iowa, have sold the Ewing Garage to C. H. Bauer of Armour, S. D.

Carl Vestre, Mayville, N. D., bought the Ford garage and will install a repairshop.

O. B. Kongsile, Fortuna, N. D., has bought R. D. Holesude's interest in Fortuna Garage.

Henry Hughes and Otto Guildermeister, Grand Rapids, Minn., have bought the Erskine & Logan Garage and will operate it as a Ford station.

Pomeroy Motor Co., Northfield, Minn., bought the F. E. Bates automobile business.

Adolph Hein, Elgin, Minn., sold his garage to Fred Fetrich, of Rochester, Minn.

C. J. McMasters, Lanesboro, Minn., bought the Lanesboro Garage from J. A. Britzius & Son.

P. J. and Joseph Pint, Sanborn, Minn., bought the Ditbenner Garage.

J. L. Holscher, Red Lake Falls, Minn., bought the Jensen & Evans Co. repairshop.

Monstad Auto Co., Hettinger, N. D., sold out to E. E. Pepke and L. W. Ginther, of Lemmon, S. D.

Theo Rinda, Helena, Mont., opened a New Idea automobile service shop at 425 Park Street, the former Holter Garage.

Hawkinson Motor Co., Grand Forks, N. D., sold to G. L. White and W. T. Johnson, of Fargo, N. D.

J. K. Bennett, Slayton, Minn., bought the half interest of his partner, Dr. L. A. Williams, in the Slayton Garage.

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Sam Morrow, Barnes City, Iowa, has bought out the interest of his partner, Bert Johnston, in the Morrow & Johnston Garage.

Parkhurst & Lavendar, Webster City, Iowa, have dissolved partnership and the garage business will be continued by Mr. Lavendar.

M. H. Driftmeir, Clarinda, Iowa, has bought the battery stock and business of the Night & Day Garage and will continue it as a separate establishment.

Guy Everett, Newton, Iowa, has gone to Colfax and entered a partnership with his brother Lloyd in a garage.

H. M. Handy, Hawarden, Iowa, has sold his garage to Charles Noltze, of Marcus, Iowa.

John Higley, Estherville, Iowa, has purchased the interest of his partner, Mr. Bright, and will continue the business.

Joseph Oschaner, Fort Madison, Iowa, has bought the Ben Timpe Garage at West Point, Iowa.

Rutherford & Johnson, Roland, Iowa, have bought the welding business from Carl Knudtson.

Ericson Auto Co., Boone, Iowa, has sold its business to the Adix Vulcanizing & Auto Repairshop.

Louis Bransch, Lake Benton, Minn., has bought the Paulinna Garage at Paulinna, Iowa.

Van Osting & Thompson, Kanawha, Iowa, have started work on an addition to their garage, 50 x 50.

W. H. Fowler, Geddes, S. D., has bought the Martin Pederson Garage.

Auto Repair & Accessory Co., Hardin, Mont., has been bought by Freer & Gericke.

New Garages

Forman Garage Co.....Forman, N. D.
Anton Sandberg & Albin Johnson, Luverne, Minn.
G. H. Williams (24 x 60)....Keewatin, Minn.
Charles Grussendorf (70 x 80), New Ulm, Minn.
W. C. Schulz (50 x 140)....Dickinson, N. D.
B. S. Thorwaldson (50 x 100)..Cavalier, N. D.
B. H. Hinjun (50 x 70, $6,000)..Wells, Minn.
C. P. Anders (addition)..White River, S. D.
John H. Wolff.....Java, S. D.
Frank Blaha (addition, 35 x 70) Ravinia, S. D.
Brambaugh & Whitehead.....Farley, Iowa
John Riha (100 x 50).....Traer, Iowa
V. J. Menter.....Eastside, Iowa
M. F. Ryan.....Corning, Iowa
Lacey Morrison .....Centerville, Iowa
Chris Lafrentz .....Odebolt, Iowa
F. E. Davis.....Laporte City, Iowa
Perry Tire Co.....Perry, Iowa
Manson Garage Co. ($10,000, 50 x 100), Manson, Iowa
Al Logsdon .....Perry, Iowa
Harold Dutter .....Auburn, Neb.
George Griesel.....Belden, Neb.
Brook & Brohmann.....Bloomfield, Neb.
Harold Peterson.....Strahan, Ia.
Worner & Devine.....Bunker Hill, Neb.
Barish Brothers Motor Co. ($25,000), Des Moines, Ia.
J. B. Nellor ($25,000).....O'Neill, Neb.
Johnson Garage Co.....Avoca, Neb.
Valentine Auto Co. ($75,000).Valentine, Neb.
Kemmerer Garage Co.....Kemmerer, Neb.
The Calberg Co. ($30,000).....Pierre, S. D.
Orr Motor Sales Co.....Omaha, Neb.
Tip McMillin.....Anoka, Neb.
Johnson & Irvin.....Franklin, Neb.
Up-to-Date Auto Co. ($10,000). Kemmerer, Wyo.
Larson & Jacobson.....Blair, Neb.
Jefferson Motor Car Co.....Carroll, Ia.
Krug Automobile Co.....Beatrice, Neb.
Miller Auto Co.....Miller, Ia.
J. R. Tibbles.....Macedonia, Ia.
The Arndt Co.....Blair, Neb.
S. J. Larson.....Randolph, Neb.

PACIFIC COAST

W. H. Tire Shop, specializing on retreads, has been opened at 486 Golden Gate Avenue, San Francisco.

L. F. Tebbutt has opened an automobile repair shop at 4622 Geary Street, San Francisco.

Sperry-Lewis Co., authorized Ford dealer, has taken possession of its new building at 3855 Geary Street, San Francisco.

Chapman & Fairfield have leased the premises formerly occupied by the Sperry-Lewis Co. on Geary Street, San Francisco, and will conduct a general automobile repair and machine shop.

F. W. Sanford has been appointed branch manager of the Oakland branch of the Howard Automobile Co., Buick distributer.

J. L. Ahlers & Co. have opened a city service store for distribution of Century tires at 430 Golden Gate Avenue, San Francisco.

S. F. Seager & Co. has been organized by Schuyler F. Seager, formerly Oldsmobile distributer in the State of California. The company will control the distribution of the Jordan on the Coast. Mr. Seager sold 1500 Oldsmobiles last year and his contract for Jordan cars is the largest ever made by that company.

Ajax Rubber Co., Inc., has located a direct factory branch and distributing center in Seattle, at East Pike Street and Broadway. Arthur Munter was appointed manager. All of Washington and part of Idaho will be directed by the Seattle branch.

Sam Scott, manager of the Storage Battery Supply Co., Tacoma, has discontinued the agency for the Willard Storage Battery Co. The storage company plans to move to new quarters in the near future.

Paige-Saxon Motor Co., Tacoma, consisting of Roy A. Parnham and Otis Johnson, has taken over the offices and plant of J. B. Schabel at 1201 A Street. A repairshop will be added.

R. L. Olson, Tacoma, Wash., has purchased the Puyallup Avenue Garage.

Great Western Motors, Inc., Seattle, formerly the Paige Motor Sales Co. of Washington, has moved to its new three-story home at East Pine and Boylston. Eaton & Campbell will occupy the Paige quarters at Broadway and Pike.

Vernon A. Smith Motor Car Co., Seattle, has located a new service station and garage for Diamond-T trucks at Tenth Avenue, Seattle.

Miller & Jacobson, owners of the Tacoma Avenue Auto Exchange, Tacoma, have taken the first floor of a building at 1214 Tacoma Avenue for an annex to their present quarters.

Studebaker Corp. will soon establish a branch in Spokane, Wash. The Portland, Ore., branch is located at Tenth and Gleason.

Gene Wilson, formerly connected with the Dodge agency in Richmond, has bought the Mt. Hamilton Garage, 323 South First Street, San José, Cal.

R. W. Carter has severed his connection with the Fisk Rubber Co. and under the name of the Carter Tire Co. has opened in San José, Cal., specializing on the products of the Automobile Tire Co.

W. J. Wagner, San José, Cal., has purchased the interest of E. L. Paine in the firm of Beatty & Paine and the business will be conducted under the name of Beatty & Wagner. A Prest-O-Lite service station has been established.

W. R. Burchell and **W. S. White** have purchased the Lick Garage, San José, Cal.

E. A. Levreau has been appointed manager of the San José branch of the Earl C. Anthony Co., Inc. Salesrooms for Packard and Reo have been opened.

Greer & Wilson Tire Co. has opened a tire store in San José, Cal., and will handle the product of the International Rubber Co., Denver, Col.

Charles S. Mitchell, Briscoe dealer, has leased salesrooms at 335 West Santa Clara Street, San José, Cal.

Coast Auto Wrecking & Supply Co. has opened a store at 31 South Third Street, San José, Cal.

Jack Frost has opened a branch on East Santa Clara Street, San José, to be used exclusively as Savage tire salesrooms.

W. J. Benson Co., San José, Cal., has opened branch salesrooms in San Francisco and Stockton. J. H. Bennett has charge of the former and H. W. Cowell of the Stockton branch.

R. F. Meredith has purchased a half interest in the Rogers Garage, Los Gatos, Cal., from K. R. Rogers. The firm has secured the Overland agency.

Curtis Bros., operating the stage line between Los Gatos and San José, have secured the Dodge agency for Los Gatos and opened a garage opposite the Southern Pacific depot.

Los Altos Garage, W. E. Andreen, proprietor, has secured the Buick agency for Los Altos, Cal.

McDonald-Green Co., Winton and Velie distributer, with main offices in Oakland, has erected a new building on South First Street, San José, Cal., which will be operated as a branch salesroom.

Latham-Davis Co., San Francisco, has purchased the former Grainger & DeHarte Garage on West Santa Clara Street, San José, and will handle the Chevrolet, Stutz and Fiat. An Oakland branch has also been opened at Thirty-third Street and Broadway.

New Garages

W. W. Trumbull (52 x 150)..Spokane, Wash.
Universal Auto Co. (12,000 sq. ft., $20,000), Spokane, Wash.
Camp & Dupuy (50 x 100, $4,200), Portland, Ore.
Spokane Auto Co., W. W. Trumbull (52 x 100, $15,000).....Spokane, Wash.
Willys-Overland Co. (113 x 180, $153,000), Seattle
John F. Bishop (115 x 50, $20,000), Dillon, Mont.
A. L. Mitchell ($25,000).....Spokane, Wash.
Hodgins Motor Co. ($15,000)..Spokane, Wash.

CANADA

Foundry Products, Ltd., Calgary, Alta., have been appointed distributers for the Cleveland tractor for the Province of Alberta.

Ignition Repair & Supply Co., Toronto, Ont., has been incorporated with a capital of $40,000 to manufacture automobile motors, batteries, magnetos and auto accessories. L. J. Pashler is one of the incorporators.

The Heller-Aller Co., Windsor, Ont., is marketing the Hy-Watt electric battery, which is claimed to be popular with Ford owners.

F. A. Cleland, Vancouver, B. C., with Thomas L. Lillie has formed a partnership and will open an agency for the sale of cars at Chilliwack, B. C.

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Queries Answered

WE SHALL BE GLAD TO FURNISH INFORMATION to anyone free of charge, but be careful to give all the facts. Inquiries are answered by mail whether they are published or not, so do not fail to enclose a stamp and your correct name and address.

Recommending a Rectifier

Answering Berhow & Olson, Huxley, Ia.

We should advise you to buy a vibrating rectifier, inasmuch as the charging of two 12-volt 6-cell batteries is too small a job for a motor generator set.

You can obtain accurate information as to what is the best charging equipment to use by writing to any of the large storage battery manufacturers. They will be only too glad to give you all the information along this line you want. If you ask them, they will specify the exact size and type of instrument which will be best suited to your needs. In writing to them be sure to give all the details.

Vulcanizing Profitable

Answering Carolina Motor Co., Statesville, N. C.

We do not believe there are any disadvantages in operating a vulcanizing plant in connection with a garage. There are times, however, when it is not profitable and, we believe, is the only reason why some garages are without them.

In towns and particularly in cities, since there are specialists doing this work, garagemen often find it unprofitable to compete with them. In a town the size of Statesville, however, we believe this would not hold true.

Freezing Mixtures

Editor Motor World: Will you be so kind as to furnish us by return mail with a very inexpensive formula to act as antifreeze mixture. We have considered the use of alcohol but have set it aside for the simple reason that it is to be used in an open tank and the evaporation would be too great.—Lally Electro-Lighting Corp., Detroit, Mich.

Answer—Glycerine would undoubtedly be the best solution for you to use, but it is so expensive as to be almost out of the question. A solution of 15 parts water and 5 parts glycerine freezes at 19 deg. above zero; a solution of 8 parts glycerine and 12 parts water freezes at 7 deg. above zero; a solution of 9½ parts glycerine and 11½ parts water freezes at zero, and proportions of 11½ parts glycerine and 9½ parts water freezes at 10 deg. below zero.

A cheaper solution is made from calcium chloride and water, is much cheaper and should be perfectly satisfactory. At 10 deg. above zero you should use a mixture of 2½ lbs. of calcium chloride per gallon of water; at zero, 3 1/0 lbs. per gallon; at 16 below zero, 3 9/10 lbs. per gallon; at 30 below zero, 4 6/10 lbs. per gallon.

In case you want intermediate points, you can obtain them by plotting a curve.

Mysterious Knock

Editor Motor World: I have a model D 45 Buick touring car which I purchased in July, 1916, and have to the present time run a little more than 9000 miles.

When the car had been run about 1000 miles a knock began to develop in the motor and increased in distinctness until at 3000 miles it seemed to reach its maximum distinctness and is still there in spite of everything I have been able to have done. The knock is not heard when the motor is pulling up grade in the high gear, but as soon as level road is encountered it immediately becomes audible when the pull lightens up on the motor, and can also be heard very plainly when the motor is idling very slowly, sounding sometimes like a dull knock and at other times sharply metallic.

I have had the following done without results: Connecting-rod and crankshaft bearings taken up; motor taken out and bearings proved with prussian blue; flywheel tightened; all pistons and connecting-rods lined up and found O. K.; crankshaft, camshaft and pumpshaft put in lathe and found to be perfect; valve and ignition timing checked up and found correct; camshaft and crankshaft examined for end play; timing gears examined for back lash, none found; new wristpins installed. — Gordon Jacobs, Hornbrook, Cal.

Answer—Quite likely the knock is caused by piston slap and the piston which is causing the trouble may be located by shorting the current at the spark plugs, on one cylinder at a time. When the knock disappears, it is evident that the trouble is in that cylinder. The remedy is to put in a new piston.

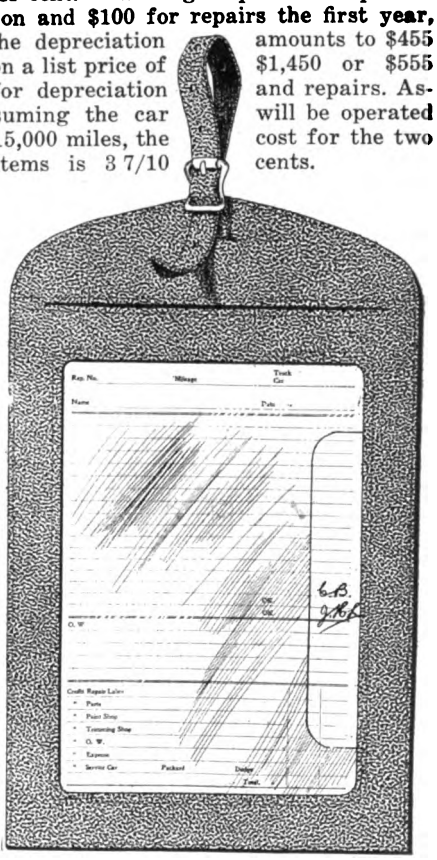
Willys Eight Upkeep Figures

Editor Motor World: I am thinking of raising money for a permanent fund for the upkeep of a first-class automobile for the uses of a hospital, especially to give convalescent patients outing rides, not as an ambulance, except, possibly, incidentally. To do that successfully one must know very nearly what such upkeep is likely to cost, expressed in dollars for a day or year.

My thought is to provide for oil, gasoline, repairs, renewals and depreciation so that the scheme can be kept going indefinitely—not for chauffeur services, as I would expect and provide that the institution shall furnish that out of the personnel of nurses and others attached to the establishment.

So I have looked about some and my present choice would be a seven-passenger Willys-Knight eight as the basis from which the estimates should be made. — Chas. O. Bachelor, Boylston, Mass.

Answer—To operate an eight-cylinder Willys-Knight costs about 10 cents per mile. This total is divided up into: Gasoline, 2 cents; oil, 1/10 cent; tires, 4 cents, and repairs and depreciation for the first year, 3 7/10 cents. The gasoline consumption is set at 14 miles per gallon, the gasoline costing 28 cents. Tires are 35 x 4½ and ordinarily will last from 3500 to 5000 miles. Four thousand miles is taken as an average, the cost of the tire, including a certain charge for the wear and tear on the tube, is placed at $40, which figures out 1 cent per mile per tire or 4 cents for the four wheels. With an oil consumption of 200 miles per quart and oil selling at 20 cents the cost per mile per oil is 1/10 per cent. Allowing 30 per cent depreciation and $100 for repairs the first year, the depreciation amounts to $455 on a list price of $1,450 or $555 for depreciation and repairs. Assuming the car will be operated 15,000 miles, the cost for the two items is 3 7/10 cents.



The Blue Ribbon Garage, Inc., Bridgeport, Conn., protects its shop work cards by putting them in cases with celluloid fronts. The case is provided with a strap so it may be attached to the car, the card being inserted through a slit in the top. The celluloid is removed at the right side so that the work may be O.K.'d as finished without removing the card from the case.

The material used is old top material, in which case it costs about 35 cents to make the case. If it is necessary to purchase the material and have the case made, it will cost about 75 cents, although if cheaper material is used the cost might be reduced to 50 cents.

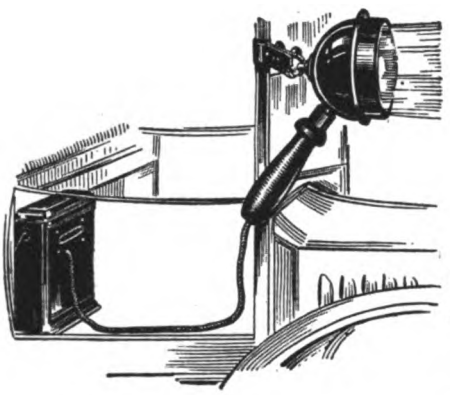
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Accessories



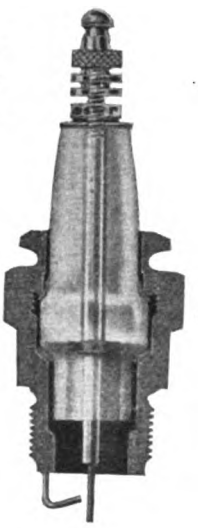
PNEUMOMETER

This indicates the pressure in the tire at all times, and is attached by screwing in place of the dust cap. Price $10 per set of four.—The Pneumometer Co., Chicago.



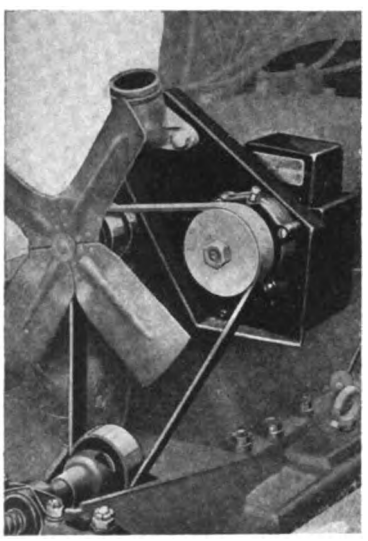
DELTA SPOTLIGHT

A combined spotlight and trouble lamp for Fords. It is mounted on the windshield and may be moved in any direction. When used as a trouble lamp it is detached from the windshield. The current is furnished by two dry cells placed on the dash. Price $3.75.—Delta Electric Co., Marion, Ind.



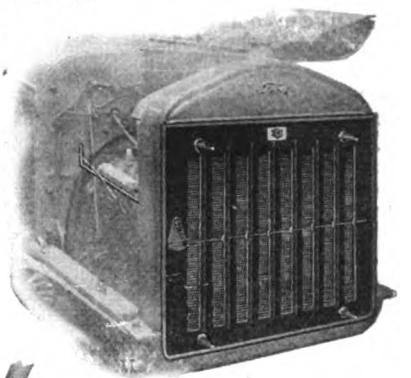
BLITZEN SPARK PLUGS

The shell is heavy gage cold-rolled steel, the porcelain is Kaolin and the electrodes are made from special steel with platinum points. These plugs come in two sizes—the junior at 75 cents and the Giant at $1. Each size has an extension, standard and S. A. E. measurement and the Giant a metric in addition.—Ideal Mfg. Co., Kansas City, Mo.



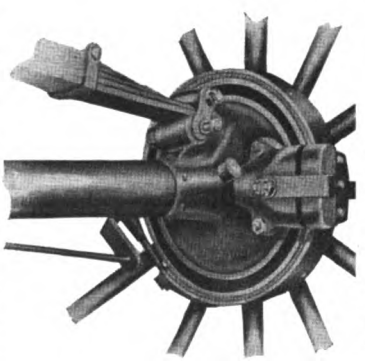
GENOLITE SYSTEM FOR FORDS

The Genolite is a 6-volt electric lighting system for Fords, and is used in conjunction with a storage battery, permitting the lights to be operated at all times. A square type generator, fitted with a Ward-Leonard controller, is bolted to the front of the engine. It is driven from the fan belt pulley on the crankshaft, the belt being lengthened and running over both the generator and the fan pulley. Tension proportional to the torque required is maintained on this belt by means of a swinging gear connection between the generator pulley and the armature shaft. The generator begins charging at 9 m.p.h., and above 13 m.p.h. the current generated is held constant at 7 amp. A 6-volt, 40 amp.-hour battery is mounted on the running board, and the control switch is mounted on the steering post. The price of the outfit complete is $38.85; with the generator, drive, cut-out and controller, $28.85. — Detroit Starter Co., Detroit, Mich.



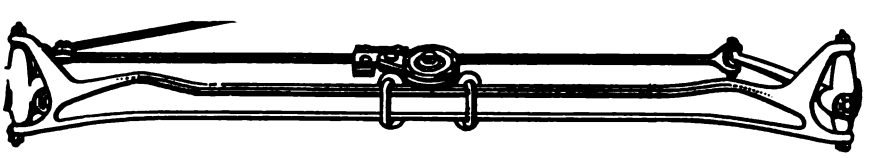
H-M METAL RADIATOR COVER

The H-M metal radiator cover for Fords is made of sheet metal divided into eight adjustable shutters operated as one. As its chief feature this cover can be operated from the dash and may be entirely closed, half or three-quarters closed or entirely opened as weather conditions make necessary. The cover is attached to the radiator with springs, securing a tight fit and doing away with rattling.—H-M Mfg. Co., Indianapolis, Ind.



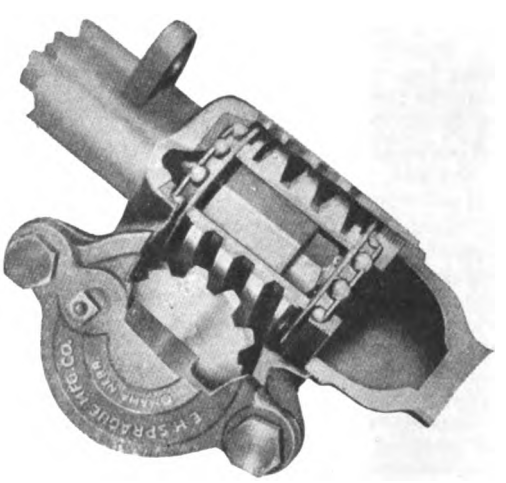
MASTER BRAKE

A powerful contracting brake for Fords controlled through the regular pedal. Price $22.50.—Master Equipment Co., Los Angeles.



FRICTION STABILIZER FOR FORDS

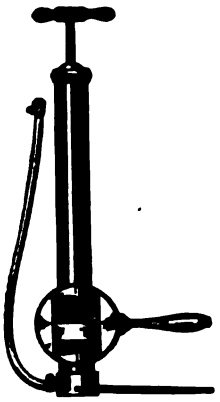
A stabilizer that has no springs but which depends entirely upon friction between steel and fiber plates, the tension of which can be regulated so that the appliance will stabilize the steering of old as well as new Fords. An arm, one end of which is fitted between the friction plates that are clamped to the front axle, extends back to the tie rod and is fastened there by means of a clamp. The only function of this device is to hold the wheels in whatever position the driver puts them. It has no tendency to straighten up the wheels. Price $3.50.—Ideal Mfg. Co., Kansas City, Mo.



SPRAGUE STEERING GEAR

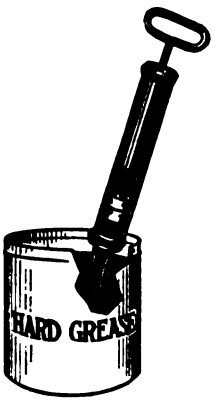
A worm and gear steering gear for Fords equipped with ball thrust bearings. It may be fitted in place of the old steering gear without drilling any holes. Price $15.—Sprague Mfg. Co., Omaha.

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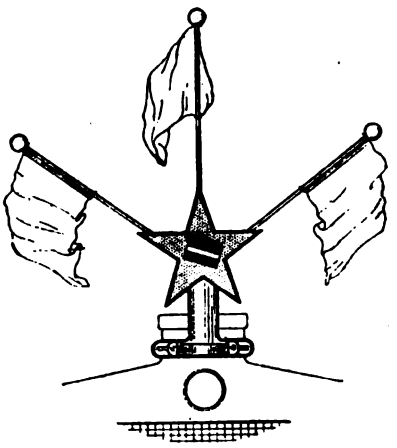
ROSE TIRE PUMP

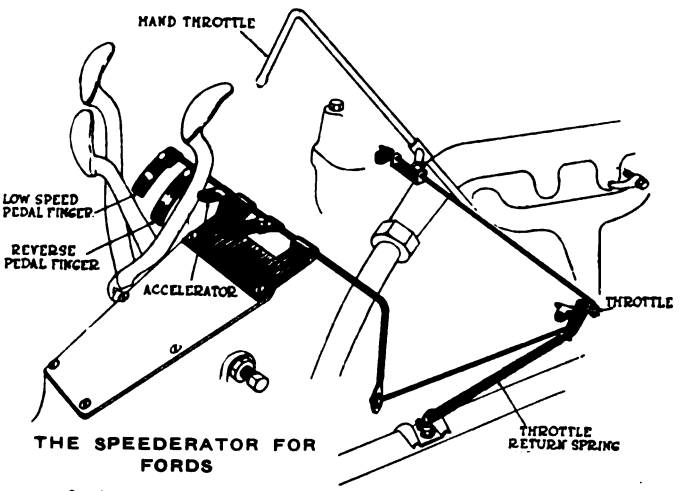
Fitted with a patented valve that eliminates friction and sucks a full supply of air below the plunger, automatically opening and closing the air supply with every stroke, it delivers air to the tube without wasted effort on the part of the operator. The pump is made of heavy steel tubing and is subject to hard use without damage. It is said a small child can inflate a tire to its capacity with this pump because of the valve construction. Price, 1¼ in., $3; 1½ in., $3.50.—J. H. Haney & Co., Hastings, Neb.



ROSE GREASE GUN

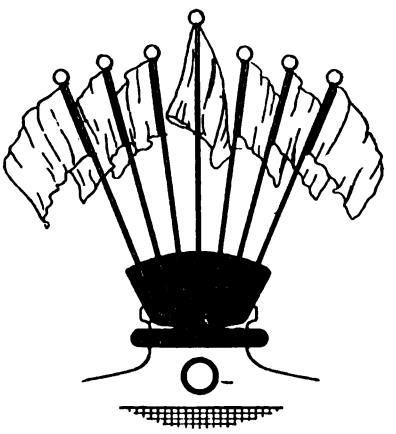
Constructed of heavy material, Rose grease guns are guaranteed not to dent or become useless from hard usage. The gun is filled by suction and will suck up through the nozzle all grades of light oils and some kinds of hard grease and fill with hard grease easily when the nozzle is removed. The gun is made for the car owner and for the shop, the only difference being in the size. The size for the car owner measures 1¼ by 12½ in. Price $1.80. The gun for shop use measures 1½ by 24½ in. Price $4.—J. H. Haney & Co., Hastings, Neb.





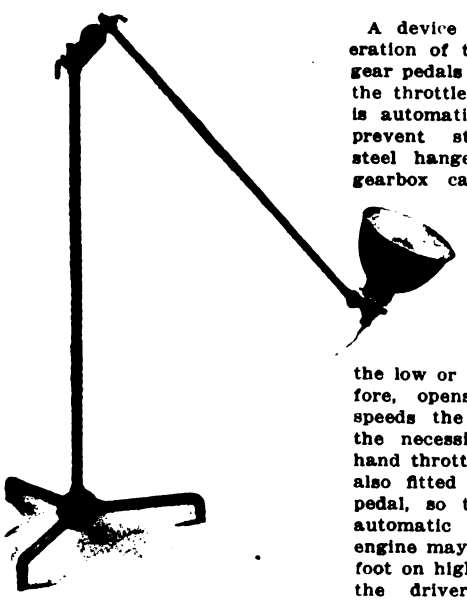
THE SPEEDERATOR FOR FORDS

A device connecting the operation of the low and reverse gear pedals of the Ford up with the throttle, so that the engine is automatically speeded up to prevent stalling. A pressed steel hanger, attached to the gearbox case, carries a cross rod, which at one end is fitted with fingers operated by the pedals, and at the other end carries a connection to the throttle lever. Pressure on either the low or reverse pedal, therefore, opens the throttle and speeds the engine up without the necessity of touching the hand throttle. The cross rod is also fitted with an accelerator pedal, so that aside from the automatic engine control, the engine may be regulated by the foot on high gear, at the will of the driver. Installation may be made by anyone in a few minutes. Price $2.85.—Detroit Starter Co., Detroit, Mich.



LIBERTY FLAG HOLDER

One type of holder consists of a five-point star with bars of red, white and blue on the front and having provision for three flags. It is attached to the radiator filler, opening by an adjustable clamp. Price, without flags, 75 cents; with flag on nickel plate shaft, $1. A multiple flag holder carrying seven flags, price 30 cents. It is made in dull black or heavy nickel plate.—Liberty Flag Holder Co., W. Broadway and Grand Street, New York.



PORTABLE FLOOD LIGHT

Neponset is the name of an adjustable lamp carried on a light, portable stand designed for use particularly in the repairshop. The light may be placed at any desired position. Price $6.50, including lamp, socket and shade.—Coffin Valve Co., Boston.

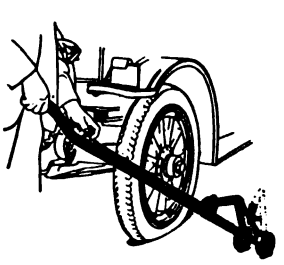


DIM-A-LIGHT LENS

A headlight lens designed to comply with the law and at the same time give maximum light. It is always in focus from every direction, no matter how it may bump or vibrate. It is concave and smooth on the outside so that it is easily cleaned. It lights the road 500 ft. ahead and illuminates the sides sufficiently to show ditches and obstructions. It has no glare and sends its strongest beams less than 43 in. above the ground. Prices, per pair, 8, 8⅛, 8¼, 8⅜ in., $1.25; 8½, 8¾, 9 in., $1.50; 9⅛, 9¼, 9½ in., $1.75; 9¾, 10, 10¼, 10½ in., $2.—Dim-A-Light Lens Co., 866 North Tenth Street, Philadelphia.

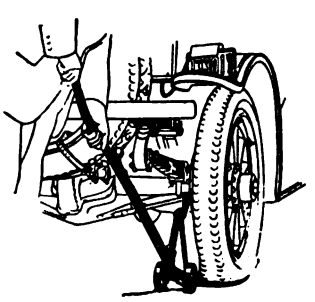
NICRO SPELTER AND FLUX

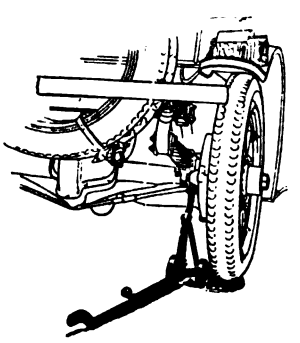
A low heat brazing spelter which brazes at 300 deg. It may be used for repairing cracked waterjackets without danger of warping the cylinder. It is not necessary to preheat the casting.—Peters Engineering Co., 3202 Chestnut Street, Philadelphia.



GEMCO ONE STROKE JACK

As the name implies, but a single stroke is required to raise the car. Price $15.—Gemco Mfg. Co., Milwaukee, Wis.





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Workman's Time Card Is Wage Record

Systematizes Time Keeping and Eliminates Errors—May Be Used in Shop of Any Size

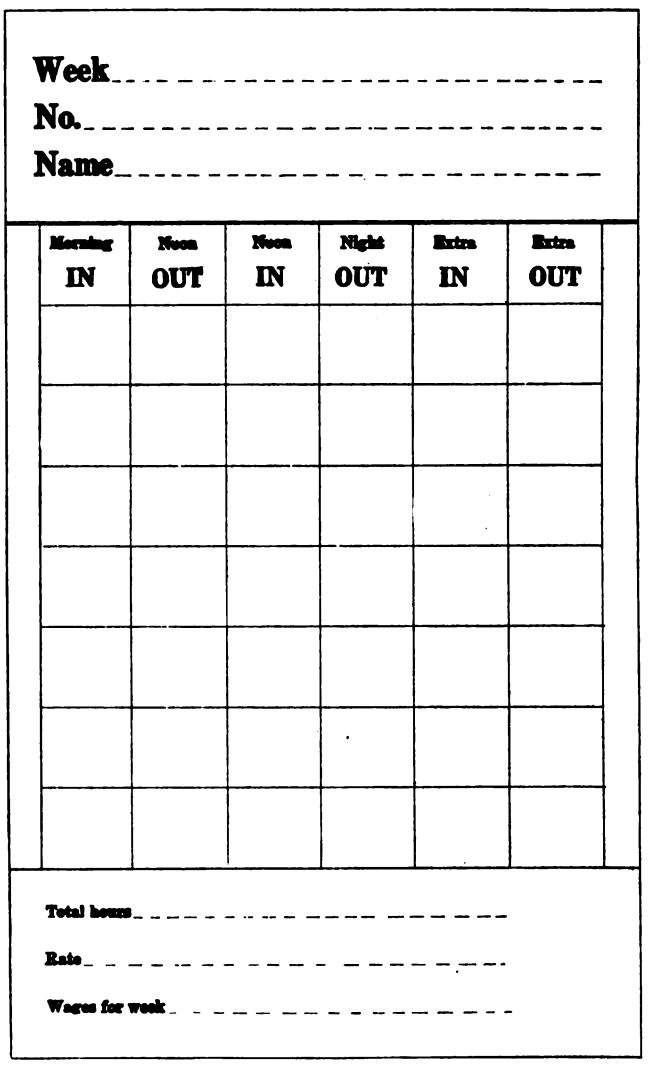
THIS card is known as the workman's time card and records the number of hours the workman puts in per week. At the top of the card the date of the week, his number and his name are placed.

The time he comes in in the morning, the time he goes out at noon for lunch, comes in after lunch, goes out at night and if there is overtime, when he comes back and when he finally goes home, are recorded. From this the total number of hours may be obtained, which is placed at the bottom together with his rate and his wage total for the week.

This card is simply for the purpose of keeping an accurate record of the time the man is working so that he may be paid exactly what money is coming to him, no more and no less. It is not to be used in connection with charging the work done on various customers' cars.

Obviously the filling out of this card should not be left to the workman but to the foreman, or owner in the small shop, or to a timekeeper in a larger shop. When the workmen come in, their time is immediately noted on the cards. This is important; it is not wise to trust one's memory, even in a small shop, and, of course, in a large one, it would be impossible.

This card is a standard size for a time clock and may be used in connection with some clocks. Other clocks may be employed with it provided their adjustment is changed to suit. However, the card is designed primarily for the man without a time clock, for the reason that if a man has a time clock he can obtain forms such as this one from the company furnishing the clock.



Prices

WE are prepared to furnish this card at the rate of $4.50 *per* 1000 *delivered. Samples will gladly be furnished free. It is printed on substantial manila stock and will stand rough handling.*

Prices on some of the other forms described in the Oct. 10*th issue are as follows; prices on the remainder will be announced shortly:*

PROSPECT CARD, 4x6, *printed on both sides,* $4 *per* 500, $7.50 *per* 1000; CASING AND TUBE RECORD, 4 x 6, *printed on both sides,* $7.50 *per* 1000; REPAIR ORDER FORM, *triplicate,* $25 *per* 1000, $37.50 *per* 2000; PURCHASE ORDER, 5 x 8, *duplicate,* $15 *per* 1000, *triplicate,* $22 *per* 1000; REQUISITION, 5 x 8, *duplicate,* $9; TRIPLICATE, $13.50. *Binders for last three,* $2.25 *each. All prices include delivery.*

WORKMAN'S time card which records the time he works per week. It gives starting and stopping time for morning, afternoon and overtime intervals.

Westinghouse Starting and Lighting Equipment

(*Continued from page* 22)

that no part of the cable terminals touch anything except the studs to which they are fastened. Otherwise the apparatus may be burned out and the storage battery ruined. And the ground wire from the battery should not be connected until all other wires are in place. This ground is made to a bolt in the muffler support. If Westinghouse lamps are used the dimmer should be removed.

6—Attach the lamp connectors, head and tail lamps, and if Westinghouse lamps be used ground one wire from each. Try all circuits and see that everything is working properly.

7—Replace the radiator.

MAINTENANCE

The cap oiler at each end of the electrical unit should receive three or four drops of machine oil each month, as should the oil cup marked "oil." But no other part should be oiled.

REMOVING BRUSHES

The spring collar may be removed and the commutator examined from time to time.

If dirty, a cloth—not waste—may be used to clean them, and sandpaper may be used to smooth them down. But emery paper should never be used. The brushes may be removed by lifting the spring holding the brush in the guide, removing the brush shunt holding screw and slipping the brush out. It should be replaced in the same position as removed, and if a new brush be replaced a good bearing over the commutator is necessary.

Fourteen-volt lamps and 10-ampere fuses should be used in this system—and a piece of wire should never be used instead of a fuse.

Correct Name Is Dim-A-Light

NEW YORK, Nov. 10—Through an error, the name of the Dim-A-Light Lens Co., Philadelphia, was incorrectly published Dim-A-Lite Lens Co., and its product was styled Dim-A-Lite lens in an advertisement which appeared in the Nov. 7 issue of Motor World. The correct name of the company is Dim-A-Light Lens Co. and the trade name of its product is Dim-A-Light.

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TABLE 2—SPACE OCCUPIED BY RAMPS AND ELEVATORS

No. of Stories	No. of Elevators	6,000-Lb. Elevator Platform 8x18 Ft. Space Occupied		16,000-Lb. Elevator Platform 10x24 Ft. Space Occupied	
		By Ramp	By Elevator	By Ramp	By Elevator
Two	Two	1,000	800	1,200	1,240
	Three	1,000	1,200	1,200	1,860
	Four	1,000	1,600	1,200	2,480
Three	Two	2,000	1,200	2,400	1,860
	Three	2,000	1,800	2,400	2,790
	Four	2,000	2,400	2,400	3,720
Four	Two	3,000	1,600	3,600	2,480
	Three	3,000	2,400	3,600	3,720
	Four	3,000	3,200	3,600	4,960
Five	Two	4,000	2,000	4,800	3,100
	Three	4,000	3,000	4,800	4,650
	Four	4,000	4,000	4,800	6,200
Six	Two	5,000	2,400	6,000	3,720
	Three	5,000	3,600	6,000	5,580
	Four	5,000	4,800	6,000	7,440

shaft, pent house and pit have been ignored, and the cost of the ramp is assumed to be the same as so much floor space.

Table 1 does not include figures for more than one elevator because in no ordinary case is it cheaper to employ two elevators. In most cases two elevators take up nearly as much or more space than the ramp so that from a space economy standpoint alone ramps are less expensive. The initial cost of elevator equipment plus yearly operating charges is therefore a clear loss. Table II gives total floor space occupied by elevators 8 x 18 ft. and 10 x 24 ft. ramps, 10 x 100 ft. and 12 x 100 ft. for buildings of two to six stories and two to four elevators. In no case is the saving in space obtained by using elevators very great, and in many cases it is the other way.

In deciding how much elevators will cost, it is first necessary to determine whether one elevator will be sufficient, and if not, how many will be needed. The number depends upon how many cars must be taken up or down at a time when the traffic is greatest, usually between 7 and 10 a.m. and 4 and 8 p.m.

This can be determined by calculating the total time for one trip which includes the time of taking an automobile either up or down, and loading and unloading. It is safe to assume that it takes one minute to place the car on the elevator and take it off. This includes the time necessary for stopping the elevator, opening the gate, getting the car on and watching the driver while he drives it on and off. The time consumed in running the elevator back and forth between its destination depends on the speed of the elevator and the average length of the trip. If it is a two-story garage, let us say that the floors are 13.5 ft. apart, then a round trip is 27 ft. If it is a three-story garage, the round trip to the third story will be 54 ft. and a round trip to the second story 27 ft., or the average will be 40.5. For a four-story garage the average trip will be to the third story, or 54 ft.

This is, of course, assuming that there are the same number of cars on each floor. Quite often this is not so. The top floor may be devoted entirely to shop purposes, in which case it may be left out of calculation entirely because traffic to this floor will be more evenly distributed throughout the day, or even if it is included, probably a different estimate will need to be made than for rush traffic on the other floors. By placing the cars on the different floors according to how often they are used, it is possible to reduce the amount of elevator service. For example, the cars which go in and out almost every day might be put on the first floor, those used less often on the second, those rarely used on the third, and so forth. This must be taken into consideration in calculating the maximum rush hour demand on the elevator. Or the rush hour demand might be greatly reduced by placing the cars which are usually called for during this period on the first floor.

However, it may be desirable to arrange the cars differently. The layout of the garage may be such that it will be desirable to put short cars on one floor, medium-sized cars on another and large cars on another. In which case it might be more profitable to classify them this way than according to their influence on rush hour traffic.

The elevator speed varies according to the capacity of the elevator and also according to the cost of installation. In other words, a faster elevator costs more than a slow elevator because the motors must have more power and therefore be larger, but for the sake of calculation a definite figure is necessary and a speed of 60 ft. per minute has been selected. Therefore, in a three-story garage, if there were forty-five machines on the second story and forty-five on the third story, which had to be removed ordinarily between 8 and 9 a.m., the average trip would be 40.5 ft. This would take 2/3 min. Add to this 1 min. for loading and unloading and the total is 1 2/3 min., or one elevator could handle forty cars per hour. Inasmuch as there are ninety cars, three elevators would be required.

This example shows first of all that it might be more profitable to instal two elevators fast enough to handle forty-five each per hour than it would be to install an extra elevator. However, a better solution would be to arrange the cars so that two elevators would be sufficient. In other words, if five cars required during this period from each of these floors could be moved to the first floor, then two elevators would do. Or, if all ninety cars could be placed on the second floor, thus cutting the average trip in half, two elevators would be enough. In this case, the cars on the third floor would be those which usually would leave at some other interval than 7 to 10 o'clock.

These figures also show the importance of system in handling the elevator traffic so that maximum efficiency is obtained. It also shows the necessity of locating the elevators and arranging the approaches so that a minimum of time is required in loading or unloading so that there will be no interference between IN and OUT machines.

NEXT WEEK

Detailed calculations showing how to determine elevator and ramp costs will be given

Why Cars Cost More

(An extract from a recent Hudson advertisement of the Bemb-Robinson Co., Detroit.)

Table of quantity and increase in cost of materials used in the Hudson Super-Six

In each 7-passenger Hudson Super-Six Phaeton the following amounts of materials are used:

	The Cost in 1916	The Cost Now	Increase in Pct.
250 lbs. frame steel	$1.35 per cwt	$5.25 per cwt	289
335 lbs. sheet metal	2.75 per cwt	8.15 per cwt	297
110 lbs. aluminum castings	.28 per lb	.50 per lb	179
210 lbs. cast iron	13.25 per ton	43.00 per ton	325

Our leather increase, which is one of the most important items, is 40%. Other upholstery items have advanced 100%. Our wheels have advanced 80% in price; our front and rear axles 30%; the components of our tires, rubber and cotton, have advanced 75% and 150% respectively. We use 60 pounds of copper in each Super-Six; it costs 100% more than a year ago.

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Bright Future Seen By Los Angeles Trade

Annual Show Brings Flocks of Live Prospects—Industries and Farms Are Prosperous

LOS ANGELES, Nov. 12—The Los Angeles Motor Car Dealers' Association opened its seventh annual automobile show here to-day. Passenger car, truck and accessory dealers are represented and there are 257 vehicles displayed. It is strictly a dealers' show and without factory support. A long list of live prospects is taken to indicate that the demand for motor vehicles will not be permanently affected by the slump now apparently existing in the industry throughout the country.

The show is held in the Sunday Tabernacle, which has been converted into a palm grove, each of the 300 posts being transformed into palm trees, and three huge intercommunicating tents. This provides more than 106,000 sq. ft. of floor space, every foot of which was sold. The show is scheduled to continue throughout the present week and may be extended if conditions warrant.

This is the seventh annual show in Los Angeles. More than 100 motor car, truck and accessory dealers are represented.

The show is under the auspices of the Los Angeles Motor Car Dealers' Association. J. S. Conwell, a dealer, is the directing manager, the other members of the show committee being P. H. Greer, Ralph Hamlin, J. A. Stoner and Harold L. Arnold.

Dealers believe in "dolling up" their show cars and there are many special jobs on display. In fact, search has to be made to locate a standard factory product. Some of the dealers have as many as twelve cars and every one a special in some particular. What few stock jobs there are seem oddities. Victoria and semi-victoria tops or standard tops with plate glass side and rear curtains predominate. Plushes, velours and highly colored tapestries are common as top linings and seat covers.

Motor car and truck dealers here are nearly all distributers also and several hundred dealers from smaller cities and towns are expected to attend. All of the distributers have the ten counties of Southern California as their field and the territory of some embraces Southern Nevada and the state of Arizona.

The California dealer always is an optimist and it is certain that the star of hope is in the ascendency now. The show is to stimulate a waning business and if it proves unsuccessful from the standpoint of sales dealers will accept as final the verdict that several months of restricted buying are ahead of them.

Up to October all sales records were being broken in this territory with an average of more than 2000 cars each month. In that month there was a marked decline. To the general unsettled conditions and the Liberty loan campaign is assigned the cause.

This is a wealthy and prosperous section of the country that has not felt marked affects of the war. The Government is contributing millions of dollars at the small shipyards, at the Camp Kearney cantonment and in the purchase of food supplies and there has been no feeling of widespread sorrow because of enlistments and the draft.

It remains a fact, however, whether due to the high cost of living or the idea of retrenchment, that money is not being spent for motor vehicles at the normal rate. Men of wealth are making their old cars do another year and many motorists who desire to graduate from the cheap car class to something better are buying high-grade used cars instead of new ones.

During 1916 Los Angeles became a point of supply of considerable importance for Western Mexico, but this export business has been seriously impaired during 1917. Last year there went from this city to south of the international border half a million dollars worth of cattle, hogs, horses and mules, $100,000 in hay and grain, $52,000 worth of flour, $40,000 worth of automobiles, more than a quarter of a million dollars in cloths, $300,000 in machinery, $200,000 in lumber, $43,000 worth of sugar, $40,000 worth of soap and probably half a million dollars worth of miscellany. Naturally, it follows that at least some part of the money derived from this export trade was expended for motor vehicles and now no more is available from this source.

California citrus growers received $47,675,000 from the sale of oranges, lemons, grapefruit and kindred products during the fiscal year ending September 1, 1917. Fully two-thirds of this sum came to Southern California, or the territory served by the automobile dealers here. But that was a bumper crop and for the current year there will be a serious loss. The production of navel oranges will be considerably less than last year, other varieties will be less than normal and the lemon crop will be but a fraction of what it was. The only hope of the growers is that the short crop of citrus fruits in Florida will make prices high for California produce.

The walnut crop which has been returning millions of dollars to the ranchers annually for several years this year suffered a high percentage loss due to a period of hot weather. There are hundreds of thousands of acres devoted to sugar beet culture and the crop now being harvested shows the returns will not be up to normal. The same is true of the bean crop. In some parts of Southern California the banking interests have tightened up very much in loaning money on prospective crops and all these factors contribute their bit to the shadows of gloom on the dealer's horizon.

Consequently, it is imperative that this show bring results by stimulating motor car buying. A number of the dealers have increased their investment in the future by occupying new buildings within recent weeks at higher rentals than they have been paying and this fact is another cause for worry.

Kansas Trade Tour Paid

(*Continued from page* 13)

the passenger cars. The Kelly engine had been running continuously since the start of the trip Monday morning; the truck carried about a thousand pounds of sand—and gathered several hundred pounds of mud on the last day.

The dominating spirit of the tours of the dealers is "co-operation." They want to help the industry. They do not and did not expect to get much direct business for themselves, but hoped to boost the business of all dealers in Kansas City and through the territory. And they were disappointed, therefore, when the biggest city on the route neglected to co-operate and failed to get up a meeting or even to give a cordial reception.

"They thought we were butting into their territory," said one Kansas Citian. "Sure! But it was to help them sell more cars. They want to boost themselves, and were afraid Kansas City's automobile business would get too much publicity."

The oil district had been rather expected to produce some business, either directly or through local dealers, as a direct result of the trip. It was found, however, that business men there haven't much time to talk of cars. When an oil man wants a car he goes and buys it; if he doesn't like it, he gets another. And most of the cars, especially the more expensive ones, sold to oil men are sold in their home towns in other States. Several dealers found good prospects during the day spent in the oil district—but the prospects lived elsewhere, and would buy at home.

It was evident, however, that the oil fields are great markets for good cars and trucks. Every class is making big money, apparently, and is willing to spend.

Several of the dealers who have trouble getting deliveries were not represented on this tour. But the fact loses its significance when it is discovered that some dealers who are shy on deliveries made the trip.

"Our customers like to know that the car they own was represented in the tour of the Kansas City Motor Car Dealers' Association," said one. "The casual comments of the people who saw the tourists pass, or heard about them, in the dozens of towns means a lot in maintaining prestige. We want them all to say 'yes, the ..... was there,' rather than 'No, it wasn't—wonder why?'"

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THE LAW

As It Applies to Dealers, Garagemen, Repairmen

The editor of this department is glad to answer questions. In sending queries, always include copies of contracts, notes, etc., to which you refer

By George F. Kaiser

Car Owner Responsible for Borrower's Negligence

THE Supreme Court of Michigan recently decided that under the laws of that state the owner of a motor car is responsible for damages caused by the negligence of a borrower.

Suit was instituted to recover $375 for damages to a team of horses and a wagon. Although the motor car was in charge of a concern which had borrowed it at the time of the accident, suit was instituted against the owner of the car. The Court held that under the Michigan statute, which reads:

"Nothing in this act shall be construed to curtail or abridge the right of any person to prosecute a civil action for damages by reason of injuries to persons or property resulting from the negligence of the owner or operator or his agent, employee or servant, of any such motor vehicle, or resulting from the negligent use of the highway by them or any of them. The owner of a motor vehicle shall be liable for any injury occasioned by the negligent operation of such motor vehicle, whether such negligence consists in violation of the provisions of the statutes of this state or in the failure to observe such ordinary care in such operation as the rules of the common law require; provided, that the owner shall not be liable unless said motor vehicle is being driven by the express or implied consent or knowledge of such owner,"

the owner of a motor car is responsible for any damages caused by persons using it with his express or implied consent or his knowledge, whether or not they are under his control and whether or not they are acting on his business.

The Court reached this decision although it admitted that an automobile will not shy, balk, back up or run away when properly directed, maintaining that if the owner of an automobile turns it over to a reckless chauffeur he should be held responsible, for the sake of the safety of the general public, and that if the owner of a motor car consents to turn it over to the control of an incompetent or reckless chauffeur, he is not deprived of any legal right by being held liable for its negligent operation when a greater degree of safety to the general public is likely to follow.

This is a rather startling decision at a time when the Courts of practically all the states seemed to agree on the proposition that the owner of a car was not responsible for negligence caused by a person unless that person was acting on his business or under his control.

This decision does not seem logical when we remember that a person can lend another person a gun without being responsible if it is used unlawfully or carelessly. There seems to be no reason why if a person can lend a gun or any other article of personal property to another without being responsible for the consequences, he should be called upon to stand a lawsuit because of the negligence of the borrower of his automobile, who may according to his best judgment be thoroughly competent to handle it carefully.

Under this statute the renting of cars by Michigan garagemen may have very serious consequences for them, for it would appear that they will have to make good for whatever damages are caused through the negligence of the persons hiring them. (164 N. W. 520.)

Was Car Under Control of Dealer or Owner?

Editor Motor World: A gentleman bought a new car from us. He had owned it about 60 days. We had, at several different times, made adjustments and never made a charge for these. He came one day with his son when we were very busy, saying that his car did not operate right and that he could not drive it slowly.

Please understand his car was not in our building at the time. We sent one of our men down to drive with him and our man, of course, operated the car, the owner sitting behind him with his son on the rear seat.

Our man drove the car both slow and fast and in going around a corner skidded on the wet pavement, badly damaging the car and hurting all three. The owner is now threatening a $10,000 suit.

We contend that the car was in his possession and under his control and that if he did not want our man to drive fast he should have said so at the time. We have his signed agreement to the fact that he did not object to the excessive speed.

We figured that it was his car and in his possession, but rather than have any trouble at the time we offered him a new car, believing that it would be an advertisement for our business in so doing. This he would not accept; he wanted about $5,000 additional damages.

This happened in June of this year and thus far nothing further has been done about the case, although his attorney called on us about a month ago and asked if a new car was the best offer we would make. We informed him that it was and that if accepted we wanted the acceptance within 24 hours.

Since then we have heard nothing. We will thank you very much for an opinion, but ask that you do not publish our name, or the city, as the case has not come up yet and publicity might, in a round-about way, hurt us.

Answer—The above letter was received from a dealer just a few days ago. This dealer's problem is so likely to confront any dealer or garageman who sells, repairs or stores cars that I am very glad to put this letter before all the readers of Motor World so that they can be more or less prepared in case a similar claim is made upon them.

The fact that the injured party's car was not in the dealer's building either before or after the accident occurred is not important.

A dealer is just as liable for damages which occur through his negligence if he has the car in his building or not and it is unnecessary for the car to be driven into his building in order that he may be put in possession of it.

The important question in connection with this inquiry is, of course, was the dealer or the owner in control of the car at the time of the accident?

Under ordinary circumstances I would say that the dealer had possession of the car and was in control of it because the average owner would not be inclined to interfere with an employee furnished by a dealer, to whom he has gone for assistance.

The driver of the car was, of course, employed by the dealer and paid by him and the owner would be no more responsible ordinarily than if he had hired an automobile and a chauffeur from a dealer to take him from one place to another.

Of course it is difficult to say definitely who would be held responsible in a case of this kind because if the matter were brought to court it would be for the jury to decide whether the car was under the control of the dealer or of the owner.

I have purposely stated that I think the above would apply under "ordinary circumstances." Where there is a statute like the one in Michigan, however, the owner may be held responsible, and the dealer may be freed from liability.

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Car Demand Healthy In British Columbia

But Delivery Is the Problem—Truck Sales Also Good—Attachments Find Ready Market

VANCOUVER, CANADA, Nov. 10—During the month of September 275 cars were delivered to British Columbia buyers, in which Ford and Chevrolet head the list in numbers, the higher priced cars such as the Studebaker, McLaughlin and Willys-Overland coming next. British Columbia is a fertile field for the automobile dealer, and though 1400 cars have been sold since the beginning of June, the approach of winter is having but little effect upon sales. The chief difficulty is obtaining deliveries, as the war has made it very difficult to obtain shipments.

An idea of another difficulty dealers have to face is the fact that a marked increase over American prices is necessary. For example, the Hupmobile, selling for $1,385 f.o.b. Detroit, is $1,750 f.o.b. Vancouver, and the prices of other cars coming from the United States are increased in the same ratio. Commercial car sales have also increased greatly in the past summer, and many dealers are handling trucks in addition to passenger cars. These run from the light delivery to the heavy 3 and 5-ton trucks, while truck attachment sales also find a ready market.

Dunham in Militor Co.

NEW YORK, Nov. 10—George W. Dunham, president of the Society of Automotive Engineers, has become vice-president of the Militor Co. of New York. This company will manufacture the Militor motorcycle, formerly known as the Militaire. A plant has been purchased at Elizabeth, N. J., where production will start very shortly. An annual output of 25,000 machines is being arranged for.

More Room for Selden

ROCHESTER, Nov. 10—The Selden Motor Vehicle Co. is adding another building to its plant. It will be 100 by 230.

Coke Price Fixed at $6

WASHINGTON, Nov. 10—The automotive industry and allied trades, including those in the castings and forging field, which are large consumers of coke, are favorably affected by the fixing of coke prices at $6 a ton by the War Industries Board for Connellsville coke in an agreement with steel producers. Though coke has been selling for $6 a ton in Connellsville for some time, the present price fixing affects the whole country. Prices have been ranging from $8 to $15 a ton.

Prices may even go lower, according to information. Government officials are considering this action on account of the low price of coal. Coke prices, according to them, are not equitable with coal prices, and a reduction below $6 will probably occur.

The weekly output of coke is running around 639,000 net tons. Connellsville, Birmingham, West Virginia, Colorado, Montana, and the Northwest are big producers.

For Tractor Demonstrations

MINNEAPOLIS, Nov. 10—The Minneapolis section of the Society of Automotive Engineers at its monthly meeting Nov. 7 voted approval of tractor demonstrations in 1918. Nothing was decided as to what kind of demonstrations there should be, but a committee will formulate plans. That data obtained should not be published seemed to be the sentiment. In other words, it was the belief that the purpose of the tests should be to help the industry and not tear it down, and that private tests are the best for the purpose.

Coffin Heads Aircraft Board

NEW YORK, Nov. 10—Howard E. Coffin on the fifth of this month was appointed chairman of the Aircraft Production Board by the President. The board is no longer connected with the Council of National Defense and is an entirely separate organization. All of the personnel, with the exception of one man, has been named. Those on the board will be General George O. Squier and Admiral W. D. Taylor. The board will work in conjunction with the Signal Corps.

Buick to Make Two Airplane Engines

FLINT, MICH., Nov. 10—The Buick Motor Co. has received contracts from the Aircraft Production Board for the manufacture of the 80-hp. LeRhone and the 110-hp. Gnome airplane engines. The Westinghouse Airbrake Co., of Pittsburgh, Pa., has received similar contracts.

Government Commandeers Machine Tools

NEW YORK, Nov. 10—Six hundred machine tools, valued at $10,000,000, were commandeered last week by the Government through its Machine Tool Section of the War Industries Board. They were taken from warehouses at various seaports. Some of them were stored for over a year and were destined for Sweden.

Some of these machine tools have been turned over to the Simplex Automobile Co., which has begun work on its order for 4000 Hispano-Suiza engines for the Aircraft Production Board.

M. & A. M. Sanctions Aero Show

NEW YORK, Nov. 10—The aero show was sanctioned to-day by the Motor & Accessory Manufacturers, Inc. The M. A. M. membership is going into the aero show—the Second International Pan-American Aeronautic Exposition, Feb. 16-23—about four times as strongly as it did a year ago. The association has taken practically all of the second floor of Grand Central Palace, this city, and as much of the third floor as it needs.

Uncover Nation-Wide Car Stealing Scheme

Officials Arrest Principals Alleged to Be Running "Fence" on an Ambitious Scale

FORT DODGE, IOWA, Nov. 10—With the arrest of Thomas E. West and M. A. Horner, officials claim to have uncovered one of the biggest automobile "fences" operating in the Northwest. West has been running a "second hand" automobile shop on First Avenue South near Sixth Street. Horner operated a "soft drink" parlor on Fourth Street and Central Avenue.

The arrests were made by representatives of the automobile protective and information bureau in co-operation with the county and city officials. Men from the bureau were in the city for several days collecting evidence before the arrests were made. The case against West and Horner is now declared to be complete.

About twenty cars, stolen principally in Minneapolis and St. Paul, have been sold through the West "agency," it is said. All are Buicks. Nine of these cars have already been recovered and are being held at the Central Motors Co.

West sold the cars for an average of about $950, it is reported. He is said to have cashed checks at once, never carrying a bank account of any size.

With the arrest of West and Horner some interesting information was given out concerning the highly organized system, of which the local branch was but one part, for stealing and selling automobiles. It is nationwide in its scope. The local "agency" might well be called a selling branch of the Minneapolis district.

From good authority it has now been found out that the organization has four branches: stealer, make-over man, head men and the sellers.

The man who steals the car is said to receive $50. His job is done when he delivers the car to the make-over man. It takes the make-over man about eighteen hours to fix the car so as to make it difficult for identification. To do this twelve numbers must be changed —frame, engine, generator, steering post, two on the body, four on the doors, transmission and differential. If there are initials or other means of identification they must be removed, for all of which the make-over man receives a hundred dollars when he turns the car over to the head men. The head men sell the car to the sellers, who in turn dispose of it to the unsuspecting purchaser.

The manner in which the stolen cars sold here were treated so as to make identification unlikely shows that the work was done by an expert. It takes an expert to tell that anything had been done to them. One car had the initials cut in the door. The initials were cut into the steel but had been so painted over as to easily escape being detected. On the doors where the factory cuts numbers into the wooden portion the

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wood had been carefully cut off and the numbers stamped.

The men were too shrewd to take any number or to duplicate numbers. Instead a system is employed to keep in touch with all automobiles that are destroyed by fire or other causes. In this way the numbers are taken from the destroyed cars. This gives them numbers actually issued by the factory and prevents duplication.

Chalmers, Copland and Lee to Mobilize Facilities for Prosecution of War

WASHINGTON, Nov. 10—The automobile industry will be represented by three men who will have points of contact with the Automotive Products Section of the Council of National Defense for the purpose of bringing together the needs of the Government and the capacities and facilities for the automobile industry for the prosecution of the war. John R. Lee has been named to represent the Ford company and A. W. Copland, of the Detroit Gear Co., will represent the Motor and Accessory Manufacturers. Hugh Chalmers, first vice-president of the National Automobile Chamber of Commerce and also chairman of the board of directors of the Chalmers Motor Co., will represent the N. A. C. C.

The committee is not a part of the Government nor of the Council of National Defense, but is the official committee of the automobile industry at Washington. Among its duties will be the surveying of the plants to ascertain the idle capacity and match these up with the Government needs for the manufacturers of war necessities.

New Willys-Overland "90" Sedan

TOLEDO, Nov. 10—The Willys-Overland Co. has developed a new convertible five-passenger Sedan on the model 90 light four chassis at $1,240. A feature of the body is the arrangement of the doors. The door on the left side of the car opens into the driver's compartment; the one on the right into the rear compartment.

Service Supply Is Reorganized

CHICAGO, Nov. 10—The Service Motor Supply Corp. has been formed with $207,000 capital stock to succeed the Service Motor Supply Co. The new corporation is under new management and has no connection with the old company.

Jorgenson Adds to Line

WAUPACA, WIS., Nov. 10—The Jorgenson Mfg. Co., Waupaca, Wis., is preparing to manufacture and market a number of new motor car accessories and specialties, in addition to its standard line of engine primers. The company also has developed a carbureter which utilizes the heavier grades of fuel and this is being manufactured on a commercial basis. The new goods may not be marketed until spring, as much delay has been encountered in procuring necessary tools and other equipment.

Plan Transcontinental Routes for Airplanes

Aero Club Officials Approve Four Routes from Coast to Coast—New York at One End

NEW YORK, Nov. 10—Four transcontinental airways have been approved by the executive committee of the Aero Club of America. These will be named the Woodrow Wilson Airway, the Wright Brothers Airway, the Langley Airway and the Chanute and Bell Airway. The Woodrow Wilson Airway will follow a straight line from New York to San Francisco, touching Cleveland, Toledo, Chicago and other important cities on the way to San Francisco. The Wright Brothers Airway will start from Washington going through North Carolina, through Georgia, Alabama, Mississippi, Louisiana, Texas, with a station at San Antonio, then through New Mexico and Arizona, ending at San Diego, Cal. The Chanute and Bell Airway extends from Boston to Seattle, touching Albany, New York, Syracuse, Rochester, Erie, Buffalo, Detroit, Grand Rapids, Minneapolis, Bismark, N. D., and Great Falls, Mont., en route. The Atlantic Airway will extend from Bangor, Me., to Key West, Fla. The Gulf Airway will extend from Key West to the mouth of the Rio Grande; the Pacific Airway from San Diego to Puget Sound.

Ford Rumor Unfounded

DETROIT, Nov. 13—The report which was published and widely circulated in daily papers last week to the effect that the Ford Motor Co. would discontinue the manufacture of passenger cars and that the Government had accepted the entire Ford plant to be used for munition work is without foundation. The Ford company will continue to build passenger cars and trucks as in the past.

In fact the Ford company has done no more than any other company. Some time ago practically every member of the National Automobile Chamber of Commerce offered its plant to the Government, provided the Government required it. The Government has not accepted any plants and likely will not do so.

$1,000,000 Worth of Orders in One Day

DETROIT, Nov. 10—The Packard Motor Car Co. reports Oct. 30 as marking the largest number of orders received in the history of the company. On that day orders on Twin-Six cars valued at more than $1,000,000 were received by mail and telegram from all parts of the country.

The business on that day marked the climax of a six weeks' sales contest, and reports show good business conditions throughout the country, especially in the West. As compared with the corresponding six weeks in 1916, an increase of more than 30 per cent is indicated. Detroit showed an increase of 225 per cent; Cleveland, 175 per cent; Baltimore, 170 per cent; Denver, 165 per cent; Omaha, 117 per cent; Syracuse, 108 per cent; Davenport, 14 per cent; Fairmont, 125 per cent; Helena, 200 per cent; Flint, 233 per cent; El Paso, 100 per cent; Sioux Falls, 133 per cent, and Charlestown, W. Va., 166 per cent.

Among the points contributing to the big volume of business reported on Oct. 29 were Detroit with 56 orders and Cleveland with 50.

Thomas Auto Truck Co. Bankrupt

NEW YORK, Nov. 10—Lack of adequate working capital has forced the Thomas Auto Truck Co. into bankruptcy. The failure of this concern has carried with it the insolvency of the Consolidated Motors Corp., an associated concern. The latter concern occupied virtually the same offices as the Thomas company. The taking over by the receiver for the Thomas company of all assets belonging to this subsidiary brought it into bankruptcy. The liabilities of the Thomas company are stated to be about $21,076 and its assets $12,878. The liabilities of the Consolidated Motors Corp. are given as $95,000.

Chicago Representation Changes

CHICAGO, Nov. 10—Dealer representation in this territory has undergone several changes during the week. Louis Geyler who has handled the Elgin in this territory for the present is giving it up and is taking on the Dort. The factory sales office of the Elgin will distribute that car in this territory. The Dort agency was left open when Otto C. Owen who has been selling the Dort and the Liberty retired from the field. No information as to Liberty sales has been given out. The James Levy Co., handling the Chalmers, has acquired the local distribution of Buick, operating under the Chicago Buick branch. At the present time Levy operates in conjunction with other big dealers in the city.

New Syracuse Dodge Distributer

SYRACUSE, Nov. 10—The C. F. Gilmour Co. has been formed here to distribute Dodge Bros. cars. H. R. Bliss, vice-president and general manager of the Colt-Stratton Co., New York, is president of the company, his associates being C. M. Bishop, of Bishop, McCormick & Bishop, Brooklyn Dodge dealer; H. A. Bonnell, Newark, N. J., Dodge dealer, and C. F. Gilmour, formerly sales manager for J. A. Cramer, Dodge dealer in Buffalo.

Brown-White Representative for Hayes Wheels

PHILADELPHIA, Nov. 10—Brown-White Inc., 2222 Chestnut Street, has been appointed sales and service representative of Castle & Kyte, Detroit, exclusive sales representative for the Hayes wire wheel.

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Closed Car Show Week Satisfies Des Moines

Dealers Stage Their First and Are Pleased with Results—Evening Attendance Poor

DES MOINES, Nov. 10—Des Moines dealers have had their first experience with an enclosed car show week and are more than pleased with the results.

They went in on the venture conservatively. There were no brass band or hoop and hurrah methods of advance advertising. But to a man every dealer who took part in the show feels that he got good results and is anxious to hold the show again next year on more extensive plans.

The proposition of holding an enclosed car show was first suggested immediately following the close of the winter show last March. At that time a number of the dealers were dubious about Des Moines being able to hold such a show. But representatives of the Clemens Auto Co. and the Sears Auto Co. announced to the other dealers that they would have an enclosed car week if they had to hold it by themselves.

This enthusiasm soon spread to the other dealers and by the time for the show to open it had received hearty support from a majority of the local dealers. About twenty dealers have taken part in the show which is under the direction of the Des Moines Automobile Dealers Association. A committee from that association, of which R. J. Clemens of the Clemens Auto Co. is chairman, handled the arrangements.

Preferring to make the first show an experiment and not go too strong on it the committee made every move conservatively. Publicity for the show was handled exclusively through the daily papers. Nearly all the dealers exhibiting used newspaper space consistently and at the bottom of every advertisement was a smaller ad for the show itself. No formal invitations were sent out by the dealers as an association but some of the individual dealers issued invitations. It is thought that next year the invitation feature will be used extensively by the association.

Decorations were provided individually by the dealers and were confined largely to the interior of the salesrooms. During the greater part of the week none of the dealers had music, but on Thursday night the Payne Motor Co., the Taylor Motor Co. and the Packard Iowa Co., who jointly occupy a new building, had music for the formal opening of the new building. A number of the dealers feel that music should be provided for the show next year.

Almost every dealer feels that insofar as sales are concerned the show has been successful. With few exceptions dealers report actual sales made during the week. The most of the sales of course have been made in the less expensive cars but the dealers handling higher priced cars have made sales and have done good work on prospects.

There has been one disappointing feature to the dealers. The evening attendance has not been as large as expected. During the afternoon the attendance was all that could be desired. All of the salesrooms were open until 10 o'clock. Dealers attribute the lack of attendance at night to the fact that the advance advertising was not sufficiently persistent and that there were no invitations.

The Des Moines dealers featured not only closed models such as limousines and coupes but cars with removable winter tops as well.

There is no question but that the show has done much to stimulate interest in enclosed cars. And this year is a good one in which to crystallize such an interest. Iowa is buying enclosed cars as she never did before. There has never been a time when the state was in more prosperous condition. Iowa is of course primarily dependent on its agricultural products for its prosperity. And this year the crops have been unusually heavy. The oat crop, which is one of the chief sources of Iowa wealth, was unprecedented and the corn crop was a bumper one.

Toledo Automobile Show Feb. 11

TOLEDO, OHIO, Nov. 10—The Toledo Auto Show Co. will hold its annual automobile show here during the week of Feb. 11 in the Terminal Auditorium. According to the present exhibition schedule, it is possible that there will be as many passenger cars shown as formerly, and a remarkable increase in the number of truck exhibits is indicated. At a meeting of the stockholders of the association Warren E. Griffith was elected president, Joseph Grasser, vice-president; J. W. Benting, treasurer, and H. W. Lanchasire, secretary. These with T. H. Deardorf, Ralph A. Parker and John Yoke form the directorate.

Taylor Motor Co. to Continue Production

FREMONT, OHIO, Nov. 10 — The Taylor Motor Truck Co. may continue to manufacture trucks in the old Burford plant, according to an order by Federal Judge Eillits to W. W. Morrison, president of the Continental Trust and Savings Bank, Toledo, trustee of the bankrupt Burford company. The court commands the trustee to turn the property over to the Taylor Motor Truck Co. as soon as an inventory is completed. Morrison is ordered to place all operations in the factory under observation and all business transacted by the company must be accounted for.

More Room for Hartford

HARTFORD, Nov. 10—The Hartford Machine Screw Co. has made large additions to its plant, which now comprises over 200,000 sq. ft. of floor space. The company manufactures Master spark plugs and power-driven tire pumps as well as a long list of screw machine products.

Passes to All Shows Require Tax Payment

Internal Revenue Department Tax Must Be Paid on Amount of Regular Admission Ticket

NEW YORK, Nov. 10—A ruling by the Internal Revenue Department at Washington has explained what must be done in the case of tickets to motor car shows. The most interesting point is that the tax must be paid on passes.

When a pass is issued the tax paid on it is the same as that paid for regular admission. In other words, if the regular admission to the show is 50 cents, which means a tax of 5 cents—1 cent for each 10—the tax on a pass would also be 10 cents.

If an exhibitor buys a large number of tickets at less than the full price and gives them away the tax on such tickets is based at 1 cent for each 10 cents which the exhibitor paid at the box office where he purchased the tickets. This tax is *not* based on the regular admission charge but on the actual price paid for the tickets by the exhibitor. The tax on a season ticket for an automobile show is 1 cent for each 10 cents paid for the ticket, regardless of the number of times the ticket is used.

The only persons who do not have to pay a tax on passes are: Children under 12 years of age, municipal officials on official duty and show employees.

A manager who will admit anyone other than those just enumerated with or without a pass or ticket violates the law if he does not pay the full tax.

Jones Broadens Its Activities

WICHITA, KAN., Nov. 10—The Jones Motor Car Co. has taken up contract work, and in addition to producing the Jones Six will manufacture bodies, tops, fenders and upholstery for passenger cars and bodies for commercial vehicles.

Ford Accessory Show May Include Tractors

CHICAGO, Nov. 13—The National Exposition for Ford accessories may stage a tractor exhibition in Chicago next fall. At a meeting of directors of the exposition it was decided to investigate the possibilities of exhibiting tractors in connection with the accessory exhibit. It is planned to change the name of the exposition to "Accessories Market." The financial report of the show indicated that a profit was made. This will not be distributed, however, but will be used as working capital. More than 50,000 persons passed the ticket takers and the sale of tickets amounted to $2,000. Manager Beulow who staged the first show will stage the next though the place has not been decided; it may be either the Colisseum or the Pavilion Stock Yards. I. P. Perry was elected first vice-president and L. P. Zinke second vice-president, the other officers remaining the same.

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Sales in Kansas City Are Holding Up Well

October Was a Good Month and November Promises Well—Closed Cars Sell Freely

KANSAS CITY, MO., Nov. 10—Sales in the Kansas City territory, which means practically the Southwest, have held up well in October, and in many instances the month of November has started off in good shape. The most gratifying situation has been the large increase in closed car sales, the volume in this trade for October being apparently double that of October last year. This gain has been partly due to the weather. It has been the coldest October in 30 years. While the weather acted as a damper on the sales of open touring models, it stimulated sales of closed models.

In Kansas City and some other of the larger cities there has also been a marked gain in sales of roadsters. Many dealers comment on the fact that the higher priced cars have maintained their averages even better than the medium priced cars, indicating that the people who have plenty of money are willing to spend it.

The West has been slower to feel the effects of war in the automobile business than perhaps some other sections of the country. Many dealers say that their year's business will equal, and in numerous cases will exceed, that of last year. The most important factor in holding down the volume of trade seems to be the stringency in materials and deliveries of cars. This shortage is having a general psychological effect on the trade and the prospects as well, in addition to the particular hardship on the dealers who cannot get cars to deliver.

The first real effect of the war was felt in Kansas City territory when the army draft came. Missouri failed to rally as much as expected after the draft was made. Eastern and central Kansas, including the oil belt, and northern Oklahoma, recuperated fully as to demand, and these have been the best fields for sales in October. They also promise best for November. The second Liberty Loan undoubtedly had some effect on sales in this territory.

"It was not so much the actual diversion of money to Liberty bonds," said one sales manager, "as the conception of the people that they ought to conserve their resources. The fact that sales fell off sharply on Oct. 15 seems to bear this out, as at that time the full effect of the sales campaign on the bonds culminated. I believe people will gradually recover from this temporary depression."

As a result of this temporary depression many sales managers are studying their fields more closely and giving more intensive help to salesmen and to dealers.

There is plenty of money in the Kansas City territory. In most of the districts the money is moving fairly freely, except in western Kansas. In that district the farmers and town people are waiting to see whether the winter conditions are favorable to the development of what is now seeded before they let go.

Throughout the entire district, however, the newspaper reports of the war and of business are undoubtedly having their effect, and it may be some time before people get in the habit of drawing their own conclusions, with some optimism, from the facts they may be able to learn.

Many New Marmon Features

INDIANAPOLIS, Nov. 12—Except for a few details the 1918 Marmon, made by the Nordyke & Marmon Co., is the same as the 1917. The new features are: Slanting windshield, plain bearing fan, magnetic tank gage, gear lever lock, single key for switch, gear lever and tool box, tonneau light and glass window in the top. The body has been altered somewhat. The back of the rear seat is flatter and the division in the front seat has been eliminated. Bijur starting and lighting takes the place of Bosch, but the Bosch magneto is retained. The new prices are: Seven-passenger open car and four-passenger roadster, $3,550; nonconvertible sedan, $4,950; limousine, $5,250; town car, $5,250; landaulet, $5,350; chassis, $3,200.

Stratton Out of Newman-Stratton

CHICAGO, Nov. 12—G. W. Stratton has severed his connection as vice-president of the Harry Newman-Stratton Co., Maxwell, King and Hal distributer. He will devote his entire time to the G. W. Stratton Co. of which he is president and which produces bodies for trucks, trailers, taxicabs. The Harry Newman-Stratton Co. will continue to distribute the Maxwell, King and Hal, Newman becoming president and general manager.

Cruiser Building Two Cars

MADISON, WIS., Nov. 10—Pending the construction of its new plant, contracts for which are being awarded at this time, the Cruiser Motor Car Co., Madison, Wis., is carrying on manufacturing operations in leased quarters in order to complete two of its convertible touring-camping cars in time for the opening of the New York show, following which one will be sent around the show circuit. Work on the first unit of the plant will begin shortly after November 15. The building will be 70 x 263 ft., part 2 stories high, designed for an output of 1000 cars during the first year. W. D. Curtis, Madison, is president of the company.

Ross Gear on Armleder Truck

CINCINNATI, Nov. 10—In the description of the 2-ton truck manufactured by the O. Armleder Co. which appeared in Motor World Sept. 5, it was erroneously stated that the steering gear employed is a Gemmer. This should have been Ross.

Future Not So Bright for Savannah Dealers

Tax, Together with Difficulty of Getting Cars, Is Causing Trade Much Trouble

SAVANNAH, GA., Nov. 10—That if conditions do not show a decided tendency to improve shortly there will be no business in passenger cars in Savannah or elsewhere is the opinion expressed by a prominent local dealer. The only class of vehicles that will be in demand, says this same authority, will be trucks which are necessary to keep business moving.

The people are beginning to look ahead now, he continues, and as things do not point to a speedy end of the war and a letup in the high prices of things they are not putting money in passenger cars. This has caused a falling off in the number of cars sold, but it is said there are still a number being sold at present. But as the days go on sales become smaller and smaller.

The tax of 3 per cent on the price of machines has not been in effect long enough yet to determine its effect upon the trade, but the dealers say it will have some effect upon sales. To what extent it will cause a falling off in sales is not known, and different dealers have different opinions. The tax is a direct one on the automobile purchaser, and some dealers are apprehensive as to what will happen when a buyer has to hand over this extra 3 per cent.

The embargo on the shipment of passenger cars from certain sections to the South is having a detrimental effect on sales. Up to three or four weeks ago, says one dealer, transportation facilities were better than they had been for months past and cars were obtained from the factory with little inconvenience. Now as things look it will be decidedly difficult to get passenger cars here. More than one dealer looks for his showroom to be empty by spring.

Savannah dealers are doing everything they can to aid the Government to increase the efficiency of the railroads. With huge quantities of munitions which must be moved expeditiously it is necessary that the loading and unloading of other freight be done without delay. Local motor car dealers are helping the cause along by unloading their shipments with dispatch.

This distributer referred to letters from dealers urging attention to his own delivery requirements, and mentioned that he thought dealers could be better occupied selling more cars, developing their territory, improving their service, than in worrying how to get the factory and distributer to send cars.

Another distributer (Hudson) who is not worried over present or future deliveries of cars said he did not want his dealers to take on any other lines. He wanted his dealers to be known as dealers in this car alone, and build their reputation on it. This distributer's business, he says, has been running equal to last year, except during the past week or so, and prospects are good.

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Business Picking Up in St. Louis Circles

After Three Weeks of Dull Trade Sales Increase Appreciably—Car Thefts Numerous

ST. LOUIS, Nov. 12—After three weeks of very slow selling, the motor car dealers here, especially jobbers, came into very good business last week. This fact developed last week at the monthly meeting of the Automobile Dealers' and Manufacturers' Association.

The dull trade of the three weeks before was attributed to the Liberty Loan campaign and the general unsettled condition preceding the taking effect of the new tax and revenue laws. Just why trade should open so quickly is a puzzle to local merchants.

The fact that the heavy part of the new trade comes through the jobbing division has caused the opinion that it is probably due to sales of farm products by farmers. Many farmers have been slow to part with their crops, hoping that the Government would raise the price on wheat or that cotton would go even higher. Several influences have been at work to convince them that the price grabbing was over and that sales must go at present prices, or less.

The Government's policy of seizing wheat in elevators has made farmers think their turn might come next. The continued fixing of prices has made the cotton farmers think that their product is not entirely safe. That there is the equivalent of "stacks of money" on the farms is conceded everywhere. Cotton pickers have been earning as high as $5 to $6 a day and where families went to the fields they have been able to buy a motor car from their earnings, which has been the case in numerous instances.

Joseph A. Schelcht, president of the Mound City Buggy & Auto Co., Allen and Jackson distributers, said: "Beginning late last week we have been receiving an unexpected lot of orders. They came without warning and we see no reason why the condition should not continue for some time." F. W. A. Vesper of the Vesper-Buick Auto Co., Paul A. Smith, general manager of the Overland Co., and others tell the same experience.

The most depressing single influence on the retail market is the daily headline in the newspapers: "SIX CARS STOLEN YESTERDAY." Dealers admit that they have prospects who fear to sell their old machine and buy a new one because of the danger of theft. As one dealer put it: "A man was here to-day who is ready to buy and has the money. But he says: 'I can tell my old car as far as I can see it. All my friends know it. It has been stolen once but a friend detected it for me. If I get a new car it will look like all others and the thieves have a fine chance of getting away with it.'

"Another feature of the stealing is the effect on the used car prices. Much of the desirable used car trade comes from the country and most of the stolen cars are sold there. When a used car thief goes into a community and sells two or three cars at the value he is glad to get, the market in that community is spoiled."

Grand Prize and Vanderbilt Races for San Antonio

NEW YORK, Nov. 10—The Grand Prize and Vanderbilt cup races will be resumed, if the plans of Clarence Bennett, of California, go through. Bennett is planning to hold the two classics in April, 1918, and is now negotiating with the Contest Board of the American Automobile Assn. and the Motor Cups Holding Assn. in regard to getting a sanction and permission to use the cups. San Antonio has been selected for the races. A 9-mile course will be used. The Grand Prize and Vanderbilt races were dropped last year, the previous races being held at Santa Monica in November, 1916. Resta was the winner of the Vanderbilt and Wilcox and Aitken were the winners of the Grand Prize.

Sheldon Axle Appoints New York Distributer

NEW YORK, Nov. 10—The Chadick-Delamater Corp. will represent the Sheldon Axle & Spring Co. for the distribution of parts in this city and vicinity. A complete stock of parts will be carried at a service station, 159 West 24th Street.

General Vehicle Receives Order for 1000 Gnome Engines

LONG ISLAND CITY, N. Y., Nov. 10—The General Vehicle Co. has been given an order for 1000 Gnome engines for airplanes.

World's Hour Record Is Put Up by De Palma

Packard Pilot, with an Aviation-Engined Car, Does 109 M. P. H. on Sheepshead Track

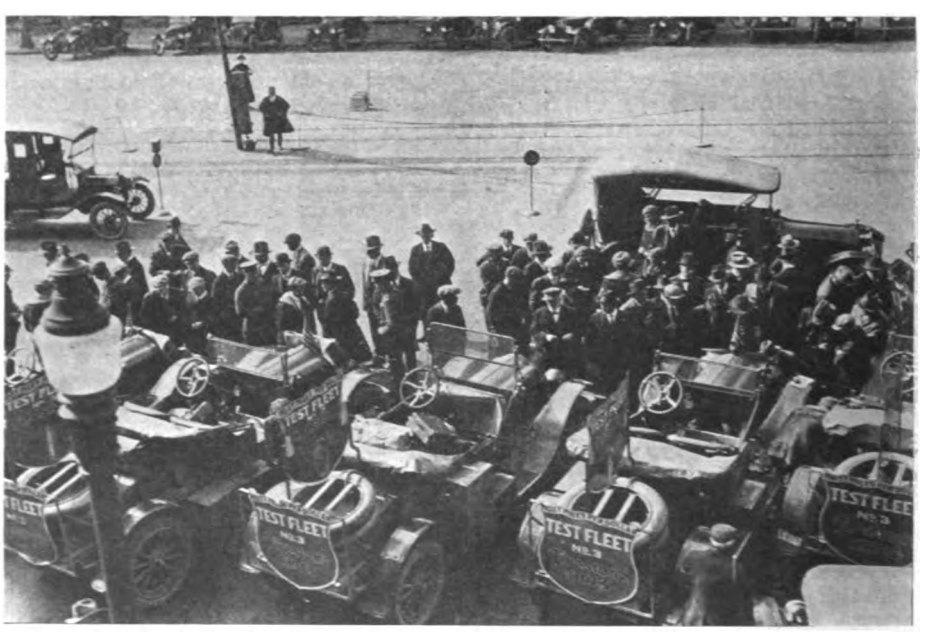
NEW YORK, Nov. 10—DePalma, who has been trying for about a month to shatter the world's 6-hr. record in a Packard 12, made another attempt today at the Sheepshead Bay Speedway. He was again unsuccessful in the 6-hr. attempt, but established a new hour record of 109 miles. The best previous time made was that of Chassagne in a 600-cu. in. Sunbeam at the Brooklands track, England, in 1910.

DePalma's best lap was at the rate of nearly 115 m.p.h. But for a tire change his time would have been around 114 m.p.h. This is the second record DePalma has broken in the past 10 days. Last week in the same car he established a new mark for 10 miles, which he covered in 5 min. 17.4 sec., or at the rate of 116.48 m.p.h. During to-day's trials DePalma actually traveled 265 ft. more to the 2-mile lap, thus bringing his average for the hour up to 112.4 miles.

Jordan Shipments Largest in Its History

CLEVELAND, Nov. 10—Shipments of the Jordan Motor Car Co. for the week ended Nov. 3 were the largest in the history of the company. Twenty-three cars were shipped on Nov. 2.

The Jordan company in the 24-day period ended Oct. 19 shipped cars valued at $261,775 and showed a net profit for the month of more than 7 per cent.



NEW YORK, Nov. 10.—More than $105,000,000 was wasted last year through tire abuse alone, according to the Firestone Tire & Rubber Co. By way of bringing this fact more prominently before motorists, the Firestone company is sending a fleet of five roadsters from its factory at Akron to all the principal cities in the country. Each car in the fleet carries supplies of literature on tire abuse which is distributed. In addition, a motion picture film has been prepared and is shown in conjunction with the visit of each of the cars to a city. There is also an exhibit of fabric and cord tires which have been ruined by abuse, these being shown by way of an example.

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Standard Army Trucks Start Rigorous Tests

Will Be Put Through Road Runs of 18 Hours a Day for a Month —Some Tests Completed

WASHINGTON, D. C., Nov. 12—Commencing this week, the first two heavy duty war trucks, designed and constructed under the direction of General Chauncey B. Baker of the Quartermaster Corps in collaboration with the Society of Automotive Engineers, will be put through a steady grinding road test in continuous runs of 18 hours per day with two shifts of drivers. These tests will continue for at least one month, under the direction of H. F. Thomson of the Massachusetts Institute of Technology.

Tests made recently prove that the new trucks have greater power and capabilities than any trucks that have ever been built for war or commercial purposes. The past two weeks have been devoted to numerous short and varied tests at points in and near Washington. The first tests, made without modifications of experiments with minor parts, were near Fort Myer where the trucks were run over heavy clay hills where in many instances the ground caved in under the wheels. The trucks were at no time in difficulty and at every point escaped from cave-ins and mud ditches either in forward or reverse gears.

The next tests taking place on the grounds at Fort Myer were made in a special ditch used for testing purposes and which is 4 ft. deep and 7 ft. wide. The trucks ran into the ditch on one side and climbed up and out on the other side without difficulty despite the fact that the full load which the truck carried shifted to the rear on the upward climb.

At Georgetown, a heavy going ditch 15 ft. long with a 25 per cent grade precedes a hill at 19 per cent grade forcing all vehicles to the lowest running speed before they reach the 19 per cent climb. The truck made the 19 per cent hill on second speed and carried the full rated load.

Following tests of this nature, all of which have been successful, the Quartermaster Corps commenced tests with parts, using the various parts designed originally for the purpose of determining the very best. For example, the two kinds of fenders, four different magnetos and many different standard carbureters have been tried out in the effort to secure the ones best suited. These tests not yet completed are developing many interesting points.

The trucks originally used 36 in. wheels and one week ago one ran on its power to Philadelphia to secure the first set of 40-in. wheels for test. On the return trip, which was made in 13 hours from 6 p. m. to 7 p. m., the truck, using the 40-in. wheels, passed through a detour of heavy mud and aided many touring cars and other trucks, stalled in the almost impassable road, to a point where they could again use their own power. The 40-in. wheels have been found better than the 36-in. size. They provide greater speed and more firm traction.

Akers Made Reo Sales Manager

LANSING, MICH., Nov. 10—R. C. Rueschaw has resigned as sales manager of the Reo Motor Car Co. Forest H. Akers, assistant sales manager, will succeed him. Akers has been with the Reo company for several years, first as traveling district supervisor and latterly as assistant sales manager.



CHICAGO, Nov. 10.—The Diamond T Motor Car Co. held its annual sales conference during the week of October 21. Meetings were held every day in the offices of the company's new plant. The names of the executives, district managers and department managers are as follows, left to right: Bottom Row (sitting): H. C. Emberson, Louis C. Huck, A. Gray. Second Row (sitting): F. J. Pardee, G. A. Gibson, C. A. Tilt, S. A. Cook, Thomas Ware. Top Row (standing): Frank S. Hyman, P. W. Herman, W. F. Bird, William Buck, D. W. Jones, C. Burton, L. E. Wagner, R. E. Breeden, H. W. Kizer, J. S. Conroy, J. P. Burris, E. E. Strickland.

National Dealer Body Broadening Its Scope

Now Includes 15 Organizations in 13 States with 500 Members —To Work with N.A.C.C.

MILWAUKEE, Nov. 10—The recently formed National Automobile Dealers' Association has in its membership fifteen of the leading automobile dealer associations of the United States, with a membership of over 500, in thirteen states. There is also a scattered membership in other states. State vice-presidents and state capital representatives, as well as an executive committee for each state, is part of the organization plan brought out by the directors who will meet in special session during the New York Show in January. At this session of the directors, state vice-presidents and executive committee members will be called to the session from eastern and southern territory.

The annual meeting will be held during the Chicago show, and at this meeting state vice-presidents and executive committees from the western states will hold a session with the board of directors.

The following nominations for state vice-presidents have been made: W. J. Haughey, Denver, Col.; Erwin Greer, Chicago; A. J. March, Milwaukee; A. C. Heath, Ft. Dodge, Ia.; Hubert Drennen, Birmingham, Ala.; H. A. Bonnell, Newark, N. J.; F. E. Murphy, Minneapolis; Lee Folger, Charlotte, N. C.; A. L. Morgan, Jacksonville, Fla.; B. M. Wylie, Indianapolis; Prince Wells, Louisville, Ky.; C. E. Baker, Detroit; A. E. Bastick, Meridian, Miss. Other nominations for state vice-presidents will be announced later by President George W. Browne.

The following resolution, which was adopted at the meeting of the board of directors following the Chicago organization meeting, has been sent to every member of the National Automobile Chamber of Commerce and also to manufacturers not affiliated with the chamber:

"RESOLVED, That the National Automobile Dealers' Association, at its initial meeting, held in Chicago, July 10 and 11, sends greetings to the National Automobile Chamber of Commerce, its officers and members, and expresses the hope that there may be the fullest and most cordial co-operation between the two organizations in all matters where their interests are mutual or related."

Leading members of the N. A. D. A. state that they are having difficulty combating persistent and unfounded reports that there is friction between the new association and the manufacturers.

At the organization meeting one or two members suggested such a thing as fighting the manufacturers, but the majority speedily squelched this sentiment, and since then all plans of the organization have been along lines of co-operation of all branches of the industry. The organization feels that nothing but co-operation can serve the best interests of manufacturers, distributers and dealers.

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Prominent Tradesmen Assume New Duties

Resignations and Promotions Place Workers in New Places

Henry E. Bodman has been elected a member of the board of directors of the Packard Motor Car Co., Detroit, filling the vacancy left by Henry B. Joy, who has resigned because of government service.

D. L. Watson is manager of the new Haynes factory service branch, Detroit, having resigned as assistant general manager of the Haynes Automobile Co. at Kokomo.

Paul Hinkley is service manager of the Bemb Robinson Co., Detroit, Hudson distributer. He was formerly in charge of service for the Harold J. Arnold Co., Los Angeles, Cal., Hudson and Dodge Brothers distributers.

Harry Bill is to be factory manager of the airplane experimental station at Dayton, Ohio, of which Major J. G. Vincent is in charge. A factory 60 x 600, two stories high, has been completed. Bill was formerly factory manager of the Chalmers Motor Co.

L. M. Baker is sales manager of the United Motors Service, Inc., Detroit. He was formerly sales representative of the Standard Steel Spring Co., Coraopolis, Pa.

Thomas Scott has rejoined the inspection department of the United States Motor Truck Co., Cincinnati.

W. J. Drumpelman is assistant sales manager of the Hudson Motor Car Co., Detroit. He was formerly sales manager of the Chalmers Motor Co. and left to join the Elgin Motor Car Corp. of Chicago as assistant general manager.

H. A. Condon has joined the Acason Motor Truck Co., Detroit.

Philip W. Sumner is in charge of the sales production department of the United States Motor Truck Co. He was formerly with the Stewart Iron Works.

W. S. Schutz, former factory representative of the Willys-Overland Co. in the middle west, has accepted a position as retail sales manager with the Overland Davenport Co., Davenport, Ia.

F. H. Ahrens recently with the Fairchild Motor Car Co., New Orleans, as manager of the used car department is now with the Sherrouse-Steele Motor Car Co. as manager of the used car department.

W. G. Becker, who has called on automobile dealers in New Orleans for the past three years, representing the Electric Appliance Co., has resigned to become connected with the Fred Campbell Auto Supply Co., St. Louis. His headquarters will be at Memphis, Tenn.

Leo H. Levy, who resigned his position with the Interstate Electric Co. to join the sales force of the Sherrouse-Steele Motor Co. has now severed his connection with this firm and has enlisted in the aviation corps of the United States Army.

Clifford M. Snow on November 1 succeeded Hal M. Harris as Southwestern division sales manager for the Selden Truck Sales Co., Rochester, N. Y., at the same time the division headquarters were removed from Atlanta, Ga., to Birmingham, Ala., where Snow will be located.

A. J. Bechtel is manager of the Studebaker factory branch in Toledo, succeeding Charles E. Doan. For the past two years Bechtel has been assistant sales manager of the Studebaker Corp.



PHILIP T. PRATHER
Who has been elected president of the Motor Car Dealers Association of San Francisco

L. F. Marshall has been made manager of the Toledo branch of the Fisk Rubber Co. He was formerly manager of the Cleveland branch.

Stanley M. Cramer of the advertising department of the Marathon Tire & Rubber Co., Cuyahoga Falls, Ohio, has gone to Camp Sherman, Chillicothe, Ohio, with the Akron contingent, leaving November 6.

A. F. Knoblock has been appointed works manager of the Cleveland Tractor Co., Cleveland.

Ben Dillahunt, formerly service manager for the Maxwell Motor Sales Co., Baltimore, has taken over the Mulberry Garage.

David Milliman, formerly on the sales force of H. S. Block, Chandler distributer, has become sales manager for the Neely-Ensor Auto Co., Cole distributer, Baltimore.

H. H. Hay, for a time district representative for D. E. trucks, is now sales manager of the passenger car department of the Baltimore Packard Co.

Lyman Bryan, a one-time manager of the Saxon department of the Mar-Del Mobile Co., Baltimore, has been appointed sales manager for the truck department of the Baltimore Packard Co.

John Sturgess has joined the engineering staff of the Stanley Motor Carriage Co., Newton, Mass., manufacturers of the Stanley steam cars. He was for many years with the Platt Iron Works Co. of Dayton, Ohio, specializing on power plant design and construction. He was the organizer and manager of the Sturgess Engineering Co.

E. Stanton has been appointed purchasing agent of the Stanley Motor Carriage Co. to succeed F. J. Maurer.

Fred W. McIntosh, who has been with the Overland Fort Dodge Co. since March 15, last, has resigned and re-entered the employ of the Clemens Auto Co., Des Moines, Iowa, as a territory representative.

C. D. Durham is general superintendent of the Buick Motor Car Co. of Flint, Mich. He was formerly general master mechanic of the company.

A. C. Bennett has been appointed manager of the Pittsburgh branch of the Buick Motor Co., Flint, Mich. Mr. Bennett has been with this company since 1911, when he started with the Des Moines branch.

J. P. Hunting of the MacAvoy Agency, Cleveland, is general traveling representative of the General Asbestos & Rubber Co. of Charleston, S. C. Harris Pickett, formerly of the MacAvoy Agency, is advertising manager of the General Asbestos Company and will take up his duties in Charleston.

W. Ashley Gray has been appointed assistant manager and **P. A. Anderson** manager of carriage sales for the Packard Missouri Motor Co., St. Louis.

J. S. Fickling, formerly vice-president and superintendent of the Fickling Enameling Corp., Long Island City, has received a commission as first lieutenant in the quartermaster's department and has been ordered to report at Washington preparatory to being placed in charge of a repair unit, leaving for France at an early date.

W. S. Jewell, well known salesman in New York, is leaving the Studebaker New York branch for Philadelphia, having purchased an interest in the Quaker City agency of this car.

Herman T. Kraft, formerly with the airplane department of the Goodyear Tire & Rubber Co., is airplane engineer in France with the air squadron.

C. A. Woodruff is general manager of the Saxon Motor Car Corp., Detroit, having resigned as purchasing agent of the Chalmers Motor Co. some time ago.

G. V. H. Cairns is sales manager of the McCarthy Motor Sales Co., Detroit, Ford dealer. He was formerly district sales manager of the Saxon Motor Car Co.

Charles H. Gressiee has joined the Selden Truck Sales Co. of Rochester. His headquarters will be Carew Building, Room No. 11, Cincinnati, Ohio, and he will have charge of the following territory: Southern Ohio, Indiana, Kentucky and West Virginia.

W. J. Carter, who for a number of years was Southern manager of the Hupp Motor Car Co., has become branch manager for the Charles W. Tway Co., Dallas, and will look after the Haynes and Hollier business for that State. His headquarters are 707 Busch Building, Dallas.

Earnest W. Pavey has been made assistant sales manager of the Oscar Lear Motor Co., Columbus, Ohio.

Harry A. Husted, formerly manager of the Henderson Auto Supply Co., Youngstown, Ohio, has entered the jobbing trade himself at 201 Bourdman Street.

David H. Bellamore has been appointed manager of export sales by the O. Armleder Co., Cincinnati.

Arthur H. Hertz has been made factory sales representative on the Pacific Coast for the O. Armleder Co., Cincinnati. His headquarters will be 112 Market Street, San Francisco.

Harry Pike, George H. Lovell, C. D. Ford and **C. G. Taylor** have become affiliated with the selling force of the Marmon Automobile Co., New York, which has just taken possession of its new show rooms at 1880 Broadway.

Prather San Francisco President

SAN FRANCISCO, Nov. 10—At the last meeting of the Motor Car Dealers Association of San Francisco, Philip T. Prather, Northern California manager for Don Lee, the Cadillac distributer, was elected president to succeed the late F. A. Marsh. Prather has been active in association matters for six years and was unanimously chosen head of this organization. The annual show of the San Francisco Dealers Association will be held in the Exposition Auditorium in February and will be larger and more striking than that of last year, which was by far the most beautiful motor car exhibit ever held in the West.

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East and West Coasts Feeling Sales Slump

Factories Report Nearly Normal Conditions in Central West and Southern Sections

DETROIT, Nov. 10—The various factories report that as a whole demand for cars is almost normal for this time of the year in the central western and southern parts of the country. It is in the New England, Eastern and Western Coast sections that conditions seem most unsettled, and it is these sections that the war tax, the Liberty bond issue, and war conditions in general seem to have affected most.

In the South the demand for light cars —particularly light used cars—has been phenomenal and Detroit dealers in used cars are daily making shipments to Southern stations that bid fair to clear this market of used Fords. One used car dealer, the Motor Mart, has shipped 4 carloads of 6 Fords each in the last two weeks to Warren, Ark., and has a contract to ship 20 carloads by Christmas. Four carloads have been shipped to Knoxville, Tenn.; 1 to Macon, Ga.; 1 to Locust Grove, Ga., and 1 to Charleston, S. C., in the same time. These cars have been sold without sales effort, and would indicate that car manufacturers should immediately attempt to develop this southern field.

The Reo Motor Car Co. reports that it did a larger volume of business in October this year than was done last year in the same time, but that some difficulty is being experienced in obtaining cars for shipment. The Olds Motor Works states that though the demand for cars is less than it was in the Spring, materials and not demand is the limiting factor in production.

The Government's further schedule of fixed steel prices has been tended to a certain extent to relieve the pressure on the material situation. But in spite of this, the material situation is bad. Alloy steels are practically impossible to obtain, and the priority ruling permitting plants doing Government work to get first chance at necessary materials compounds matters. One automobile plant in Detroit, having a 600-car per day capacity, and recently working on a 400-car per day schedule, has had to cut down its output to about 250 because of the impossibility of obtaining fenders.

If such a thing is possible, the freight car situation is worse now than it has been for some time. The priority board has restricted the use of open cars, excepting flat cars, for automobile shipment and in some instances cars loaded with automobiles have been unloaded for Government use.

Drive-aways have relieved the situation somewhat and for the present, at least, the lake routes are offering another outlet. During the first four days of this week the White Star line alone has carried an average of 60 machines per day to Toledo, where they were distributed overland to Ohio, Indiana and Illinois dealers. One company alone plans to ship 35 cars daily by this route.

Erie Adds a Truck

PAINESVILLE, OHIO, Nov. 9—The Erie Motor Car Co. has completed the design of its one-ton truck and plans to start production at an early date. This truck is constructed throughout of standard units and incorporates a Continental engine, Fuller gearbox and clutch, Torbensen rear and Columbia front axle and Lavine steering gear. It has 127 in. wheelbase and is mounted on solid tires 34 x 3 front and 34 x 4 rear. A starting and lighting system is part of the regular equipment. The price of this truck is not determined.

New York Distributer for U. S. L.

NEW YORK, Nov. 10—The H. B. Shontz Co., Inc., has been appointed distributer and will act as Central Service Station for U-S-L storage batteries in the Metropolitan district. The three-story building at 157 West Fifty-fourth Street will be used exclusively as a battery service station, with garage facilities for cars whose batteries need attention. H. B. Shontz, president and general manager of the new company, has been sales manager of the P. J. Durham Co. for the past 2 years.

Hudson Prices to Advance $200 to $300

NEW YORK, Nov. 10—The price of the Hudson car will advance on Dec. 1 from $200 to $300, according to the type of body.

More Winter Driving in Mississippi Valley

Strong Demand for Detachable Tops Nearly Swamps St. Louis Dealers

ST. LOUIS, Nov. 12—Detachable tops for motor cars are meeting with an unexpected and unprecedented demand in the Mississippi valley territory, according to local wholesale distributers. "This year for the first time we are receiving and shipping tops in carload lots," said F. W. A. Vesper of the Vesper-Buick Auto Co. "Country dealers are showing an unexpected interest in the tops."

Packard Advertising Men Meet

DETROIT, Nov. 7—Branch advertising managers of the Packard Motor Car Co. are holding a convention here to-day for the purpose of discussing dealer advertising. Representatives are present from New York, Chicago, Cleveland, Philadelphia, Pittsburgh and all the larger centers. The Packard company is preparing an advertising campaign from the dealers' angle and the purpose of the convention is to obtain a first-hand knowledge of what is desired.

Hupp Prices $100 Higher Nov. 15

NEW YORK, Nov. 13—The Hupp Motor Car Corp. on Nov. 15 will raise its prices $100 on its Model N car. After Nov. 15 the two and five-passenger model will be $1,485 and the Sedan $1,835.



NIAGARA FALLS, N. Y., Nov. 10.—The annual conference of the service station representatives of the U. S. Light & Heat Corp. was held at the Niagara Falls factory, Oct. 23 to 25. The meetings were presided over by J. A. White, sales manager of the battery division, and H. A. Harvey, general service manager.

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Specifications of the Leading Cars

MOTOR WORLD GUIDE

Revisions Are Made in Table Every Week

Model	Motor	S. A. E.	Ignition	Carbureter	Starter	Clutch	Gearset	Wheelbase	Tires	Rims	2-Passenger	5-Passenger	7-Passenger	Coupe	Sedan	Limousine	Detachable Top
ABBOTT																	
6-44	6-3½x4½	25.3	Remy	Stmbg	Remy	DP	3	122	32x4	SS	1295	†1295	1295	....	1920	....	....
6-60	6-3½x5½	29.4	Remy	Stmbg	Remy	DD	3	122	34x4	SS	1595	....	1595	2150	2150	....	....
ALLEN																	
41	4-3½x5	22.5	Conn	Stmbg	A-Lite	D	3	112	32x3½	SS	†1095	1095	....	....	1395	....	....
AMERICAN-SIX																	
A	6-3½x5	21.6	G & D	Zenith	G & D	D	3	122	32x4	SS	....	1375	....	....	....	....	....
ANDERSON																	
Six-40	6-3½x4½	25.4	Conn	Zenith	Wsths	DP	3	120	33x4	SS	....	1455	....	....	2165	....	....
APPERSON																	
6-18	6-3½x5	29.4	Remy	Rafid	Bijur	DP	3	130	34x4	SS	†2200	....	2200	....	....	....	....
8-18	8-3½x5	33.8	Remy	Johnson	Bijur	DP	3	130	35x4½	SS	†2550	....	2550	....	....	....	....
AUBURN																	
6-39	6-3½x5	23.4	Remy	Rafid	Remy	DP	3	120	34x4	SS	1195	1195	*1220	....	....	....	1380
6-44	6-3½x5½	29.4	Delco	Rafid	Delco	DP	3	131	35x4½	SS	....	†1635	1635	....	....	....	1935
AUSTIN																	
Hy-King	12-2½x5	39.6	Delco	Stmbg	Delco	D	6	142½	34x4½	QD	3750	3750	4000	4550	4950	5250	....
BIDDLE																	
D	4-3½x5½	22.5	Dixie	Zenith	G & D	DP	4	122	32x4	QD	2200	2350	†2375	....	....	3800	3900
BOUR-DAVIS																	
17	6-3½x4½	25.3	Remy	Stmbg	G & D	DP	3	118	32x4	QD	....	1385	....	....	....	....	....
BREWSTER																	
	4-4 x5½	25.6	Bosch	Zenith	U.S.L.	C	3	125	34x4½	SS	7200	....	....	....	8000	8500	....
BRISCOE																	
B4-24	4-3⅛x5½	16.3	Conn	Buick	A-Lite	C	3	104	30x3½	C	725	725	....	....	....	....	850
BUICK																	
E 4-34-35	4-3½x3½	18.2	Delco	Marvel	Delco	C	3	106	31x4	C	795	795	....	....	....	....	....
E 44-45	6-3½x4½	27.3	Delco	Marvel	Delco	DP	3	118	34x4	SS	1265	1265	....	‡1695	....	....	1465
E-49	6-3½x4½	27.3	Delco	Marvel	Delco	DP	3	124	34x4½	SS	....	....	1495	....	2175	....	....
CADILLAC																	
57	8-3½x5½	31.2	Delco	Own	Delco	D	3	{132 {125	35x5 34x4½	SS	2805	....	2805	....	3650	4145	....
CASE																	
T17	4-3⅝x6	21.0	Conn	Rafid	A-Lite	C	3	120	34x4	SS	†1190	....	1190	....	....	....	....
U	6-3½x5½	28.4	Wsths	Rafid	Wsths	D	3	125	35x4½	....	....	....	1875	....	....	....	....
CHALMERS																	
6-30	6-3½x4½	25.4	Remy	Stmbg	Wsths	DP	3	{117 {123	32x4 34x4	SS	1250	1250	1350	1625	1850	2925	....
CHANDLER																	
17	6-3½x5	29.4	Bosch	Rafid	G & D	D	3	123	34x4	SS	1595	....	1595	2195	2295	2895	....
CHEVROLET																	
490	4-3⅛x4	21.7	Conn	Zenith	A-Lite	C	3	102	30x3½	C	635	635	....	....	1060	....	....
FA-5																	
FA-2	4-3⅛x5½	21.7	Remy	Zenith	A-Lite	C	3	108	33x4	SS	935	935	....	....	1475	....	....
D	8-3½x4	36.45	Remy	Zenith	A-Lite	C	3	120	34x4	SS	1385	1385	†1385	....	....	....	....
COLE															{2495		
860	8-3½x4½	39.2	Delco	Stmbg	Delco	C	3	127	35x4½	SS	†1995	....	1995	2495	{2695	....	....
COLUMBIA																	
	6-3½x4½	25.3		Stmbg	W.Lnrd	DP	3	115	32x4	....	†1495	1350	1295	....	1995	....	....
COMMONWEALTH																	
Ultra 4-40	4-3½x5	19.6	A.Kent	Carter	Dyneto	DD	3	110	32x3½	C	†895	895	....	....	....	....	....
CROW-ELKHART																	
CE-33-35	4-3½x5	19.6	Conn	Zenith	Dyneto	D	3	114½	32x3½	SS	†995	{935 {995	....	1195	1275	....	....
DANIELS																	
B	8-3½x5	33.8	Wsths	Zenith	Wsths	D	3	127	34x4½	QDR	†3100	3100	3100	....	....	....	....
DAVIS																	
H & I	6-3½x4½	25.3	Delco	Stmbg	Delco	C	3	119	34x4	....	1295	1295	1295	1695	1795	....	1995
J	6-3½x5½	29.4	Delco	Stmbg	Delco	C	3	124	34x4½	....	....	1595	1595	....	....	....	....
DETROITER																	
6-45	6-3½x4½	25.3	Conn	Ball	A-Lite	D		119	33x4	SS	‡1395	1395	†1425	....	1875	....	....
DISPATCH	4-3½x5	22.5	Bosch	Rafid	U.S.L.	CV	4	120	36x3½	QD	1135	....	1210	1400	....	....	....
DIXIE FLYER																	
LS35	4-3½x5	16.9	Conn	Carter	Dyneto	D	3	112	32x3½	SS	†895	895	....	....	1295	....	....
DOBLE	2-5 x4	....	Own	Dobl Stmb	Wagner			135	35x5	....	....	....	3500	..	....	....	....

Model	Motor	S. A. E.	Ignition	Carbureter	Starter	Clutch	Gearset	Wheelbase	Tires	Rims	2-Passenger	5-Passenger	7-Passenger	Coupe	Sedan	Limousine	Detachable Top
MADISON																	
4	....	....	....	....	....	....	..	120	34x4	....	....	....	....	....	....	....	....
	6-3½x5	23.4	Remy	Rafid	Remy	DD	3	115	34x4	SS	†1285	1285	1375	....	....	....	....
MAIBOHM																	
A	4-3½x4	15.6	A.Kent	Zenith	Disco	DD	3	105	30x3½	C	795	....	....	....	....	....	....
MARION HANDLEY																	
6-40	6-3½x5	23.4	Wsths	Stmbg	Wsths	DD	3	120	32x4	SS	†1350	....	1350	....	....	....	....
6-60	6-3½x5½	29.4	Wsths	Stmbg	Wsths	DD	3	125	35x4½	SS	†1650	....	1650	....	2350	....	....
MARMON																	
34	6-3½x5½	33.7	Bosch	Stmbg	Bijur	C	3	136	32x4½	QD	†3550	3500	3550	....	4950	5250	....
MAXWELL																	
25	4-3½x4½	21	A.Kent	K D	Simms	C	3	109	30x3½	C	†745	745	....	1095	1095	1095	855
McFARLAN																	
	6-4½x6	48.6	Mag'to	Stmbg	Wsths	DP	3	136	35x5	QD	3500	3500	3500	....	4600	4650	....
MERCER																	
22-73	4-3½x6½	22.5	Bosch	Zenith	U.S.L.	DD	4	132	34x4½	QD	†3500	*3500	....	....	....	....	....
22-73	4-3½x6½	22.5	Bosch	Zenith	U.S.L.	DD	4	115	32x4	QD	3400	Raceabout	3250	....	....	....	....
METZ																	
25	4-3½x4	24	A.Kent	A.W.T.	Wsths	F	.	108	32x3½	SS	695	695	....	....	....	....	....
MITCHELL																	
D-40	6-3½x5	25.4	Conn	Rafid	Splitdf	C	3	120	32x4	SS	1250	1250	....	1850	1950	....	800x
C-42	6-3½x5	29.4	Conn	Stmbg	Wsths	C	3	127	34x4	SS	‡1490	1510	1525	2135	2275	2850	800x
MOLINE-KNIGHT																	
C	4-3½x5	22.5	Conn	Schebler	A-Lite	C	3	118	34x4	SS	†1575	1575	....	....	....	....	....
G	4-4 x6	25.6	Conn	Schebler	A-Lite	C	3	122	35x4½	SS	†1950	....	1950	2490	....	....	....
MONITOR																	
C-R	4-3½x4½	22.5	Heinse	Schebler	Heinse	D	3	110	32x3½	SS	995	995	....	....	....	....	....
N-O	6-3½x4½	25.4	Heinse	Stmbg	Heinse	D	3	117	33x4	SS	1195	1195	....	....	....	....	....
MONROE																	
M-3	4-3 x4½	14.4	Conn	Zenith	A-Lite	DD	3	96	30x3	QD	565	‡635	....	....	965	....	....
M-6	4-3½x4½	16.9	Conn	Zenith	A-Lite	DD	3	115	32x4	QD	....	1095	....	....	....	....	....
MOON																	
6-36	6-3 x4½	19.8	Delco	Titan	Wagner	DP	3	114	32x3½	....	....	....	1095	....	....	....	....
6-45	6-3½x4½	25.3	Delco	Rafid	Delco	DD	3	118	34x4	SS	‡1575	....	1575	....	....	....	....
6-66	6-3½x5½	29.4	Delco	Rafid	Delco	DD	3	125	35x4½	SS	†1850	....	1850	2450	2450	....	....
MURRAY																	
1918	8-3½x5	33.8	Dixie	Zenith	Wsths	DP	3	128	34x4½	..	2800	2800	2800	3300	....	3750	....
NASH																	
671	6-3½x4½	29.4	Delco	Rafid	Bijur	DP	3	125	34x4	SS	....	....	1465	....	....	....	....
681-684	6-3½x5	25.4	Delco	Marvel	Delco	P	3	121	34x4	SS	1295	1295	....	....	1985	....	....
NATIONAL																	
Six	6-3½x5½	29.4	Dixie	Rafid	Wsths	C	3	128	34x4½	QDR	†1995	†1995	1995	2645	2820	....	....
Twelve	12-2½x4½	39.7	Delco	Rafid	Bijur	C	3	128	34x4½	QDR	†2595	†2595	2595	3245	3420	....	....
NELSON																	
	4-3½x4½	15.6	Bosch	Zenith	U.S.L.	D	3	104	32x4	SS	1200	†1400	....	....	1800	....	....
OAKLAND																	
34-B	6-2½x4½	19.0	Remy	Marvel	Remy	C	3	112	32x4	SS	†990	990	....	1400	....	....	....
OLDSMOBILE																	
45	8-2½x4½	26.4	Delco	Johnson	Delco	C	3	120	34x4	SS	....	....	1467	....	....	....	....
37	6-2½x4½	18.9	Delco	Johnson	Delco	C	3	112	32x4	SS	†1185	1185	....	1595	1695	....	....
OLYMPIAN																	
	4-3½x4½	37	Conn	Carter	A-Lite	D	3	114	32x3½	....	†965	965	....	1340	1565	....	....
OVERLAND																	
85B4	4-4½x4½	27.2	Conn	Titan	A-Lite	C	3	112	32x4	SS	†915	930	....	1285	1485	....	....
90	4-3½x5	18.2	Conn	Titan	A-Lite	C	3	{104 {106	31x4	C	780	795	†840	....	1240	....	....
OWEN-MAGNETIC																	
M-25	6-3½x5½	29.4	Bosch	Zenith	O-M	OM	6	125	34x4½	SS	....	3300	....	3650	....	4350	....
O-36	6-3½x5½	33.6	Bosch	Zenith	O-M	OM	6	136	35x5	SS	‡3950	†3950	3950	....	....	5000	....
PACKARD																	
2-35								{136					4100	....	....	5650	....
3-35	12-3 x5	43.2	Delco	Own	Bijur	DD	3	{128	35x5	QD	....	3700	3700	5050	....	5350	....

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DODGE BROTHERS																		
	4-3½x4½	24	Delco	Stewart	N.R.	D	3	114	32x3½	SS	865	865	....	1350	1350	....	....
DORRIS																		
I-C-6	6-4 x5	38.4	Bosch	Stmbg	Wsths	D	3	130	36x4½	SS	....	....	2785	3325	3350	4150	....
DORT																		
9	4-3½x5	16.9	Conn	Carter	Wsths	C	3	105	30x3½	QD	†725	725	....	....	1095	....	845
ELCAR																		
D.F.	4-3½x5	19.6	Delco	Carter	Dyneto	DP	3	115	32x3½	SS	845	845	†845	....	....	....	....
ELGIN																		
	6-3 x4½	21.6	Remy	Stmbg	Wagner	DP	3	117	32x4	....	†1095	1095	....	1645	....	....	....
EMPIRE																		
50-51	4-3½x5	24.0	Conn	Stmbg	A-Lite	DP	3	115	32x4	SS	1165	1125	....	....	....	....	....
70-A	6-3½x4½	25.4	Conn	Stmbg	A-Lite	DP	3	120	34x4	SS	†1345	1375	1385	....	1625	....	....
FIAT																		
55	4-5½x6½	42	Bosch	Zenith	Wsths	D	4	140	35x5	QD	....	....	5500	....	....	6500	....
FORD																		
T	4-3¾x4	22.5	Own	{Holly Kngstn	....	D	2	100	30x3½rC		345	360	....	560	695	....	....
FRANKLIN																		
9	6-3½x4	25.3	A.Kent	Own	Dyneto	D	3	115	{32x4 33x4½}	SS	2000	2050	....	2850	2950	3300	....
GLIDE																		
6-40	6-3½x5	23.4	Wsths	Rafld	Wsths	D	3	119	34x4	SS	....	1395	....	....	1595	....	....
GRANT																		
K	6-3 x4½	21.6	Remy	Stmbg	Wagner	C	3	112	32x3½	....	‡875	875	....	....	....	....	....
HAL TWELVE																		
	12-2½x5	39.7	....	Stmbg	Wsths	DP	3	135	34x4½	SS	2600	†2600	2600	....	3500	4500	....
HALLADAY																		
S	6-3 x5	21.6	A-Lite	Stmbg	Wsths	D	3	118	33x4	SS	‡1185	1150	....	....	....	....	....
R	6-3½x5	23.4	Wsths	Stmbg	Wsths	D	3	122	34x4	SS	1385	1385	....	....	....	....	....
HARROUN	4-3½x5½	16.9	A.Kent	Stmbg	Remy	C	3	106	30x3½	....	....	785	....	....	....	....	....
HOWARD																		
	4-3 x4½	14.4	A.Kent	Zenith	Wagner	..	3	100	28x3	....	750	....	....	....	....	....	....
HAYNES																		
36	6-3½x5	29.4	Remy	Rafld	L-N	DP	3	121	34x4	SS	....	1595	....	....	2260	....	....
37	6-3½x5	29.4	Remy	Rafld	L-N	DP	3	127	35x4½	SS	†1725	....	1725	....	2390	....	....
40	12-2½x5	36.3	Delco	Rafld	L-N	DP	3	121	34x4½	SS	....	2095	....	....	2760	....	....
41	12-2½x5	36.3	Delco	Rafld	L-N	DP	3	127	34x4½	SS	†2225	....	2225	....	2890	....	....
HOLLIER																		
196	6-3 x4½	21.6	Remy	Stewart	Apleo	C	3	116	32x3½	SS	....	1085	....	....	....	....	....
188	8-3 x4½	28.8	A.Kent	Stewart	Apleo	C	3	116	34x4	SS	†1285	1285	....	....	....	....	....
HUDSON																		
Super-6	6-3½x5	29.4	Delco	Own	Delco	D	3	125½	35x4½	SS	1650	†1750	1650	1950	2175	2925	....
HUPMOBILE																		
	4-3½x5½	22.5	A.Kent	Zenith	Wsths	D	3	119	34x4	SS	1485	1485	....	....	....	....	....
NU	4-3½x5½	22.5	A.Kent	Zenith	Wsths	D	3	134	35x4½	SS	....	....	1640	....	....	....	....
INTER-STATE																		
T	4-3½x5	19.6	Remy	Schebler	Remy	C	3	110	33x4	SS	875	925	†950	....	1325	....	....
JACKSON																		
349	8-3 x3½	28.8	A-Lite	Zenith	A-Lite	DP	3	118	34x4	SS	†1495	1495	1570	....	2195	....	1705
JONES	6-3½x5½	29.4	Remy	Stmbg	Remy	DP	3	125	34x4	....	....	1675	1675	....	2550	....	....
JORDAN																		
Sixty	6-3½x5½	29.4	Bosch	Stmbg	Bijur	DD	3	127	35x4½	SS	1995	†1995	1995	....	2650	3300	....
KING																		
EE	8-3 x5	28.8	A.Kent	Ball	Bijur	DP	3	120	34x4	SS	‡1585	†1700	1650	....	2300	....	....
KISSEL																		
100-pt.	6-3½x5	25.3	Remy	Stmbg	Own	C	3	117	34x4	SS	†1295	1295	1385	1735	1735	....	1735
Double-6	12-2½x5	39.7	Delco	Stmbg	Own	DD	3	...	34x4½	....	1385	....	2250	....	2650	....	2650
KLINE																		
6-38-G	6-3½x4½	25.3	Wsths	Rafld	Wsths	DP	3	120	34x4	SS	1495	1495	†1495	....	....	....	....
LEXINGTON																		
6-O	6-3½x4½	25.3	Conn	Rafld	Wsths	DD	3	116	32x4	QD	....	1345	....	....	1510	....	....
6-R	6-3½x4½	25.4	Conn	Rafld	Wsths	P	3	122	34x4	QD	....	....	1585	....	1785	....	....
LIBERTY																		
6	6-3½x4½	25.3	Delco	Stmbg	Delco	DP	3	115	32x4	SS	1350	1350	....	....	1925	....	....
LOCOMOBILE																		
38 Series II	6-4½x5	43.3	Berling	Ball	Wsths	DD	4	139	37x5	QD	†5150	*5000	5000	....	....	6200	....
48 Series II	6-4½x5½	48.6	Berling	Ball	Wsths	DD	4	142	37x5	QD	†6050	*5950	5950	....	....	7200	....
LOZIER																		
84	4-4½x6½	28.9	Bosch	Stewart	G & D	D	4	120	36x4½	SS	....	....	1695	....	....	....	....
82	6-3½x6	36.0	Eisman	Rafld	G & D	D	3	133	36x4½	SS	....	....	2775	....	....	....	....
LUVERNE																		
17	6-3½x5	33.7	Bosch	Schebler	Bosch	DD	.	132	35x4½	SS	....	....	1650	....	....	....	....

PAIGE																		
6-39	6-3½x5	28.4	Remy	Stmbg	G & D	D	3	117	32x4	SS	1330	1330	....	....	1925	....	....
6-55	6-3½x5½	29.4	Remy	Rafld	Remy	D	3	127	35x4½	SS	....	....	1775	2350	....	3330	....
PAN-AMERICAN																		
	6-3½x5	28.4	G & D	Rafld	G & D	D	3	120	33x4½	SS	....	1500	....	....	....	....	....
PATERSON																		
6-45	6-3½x4½	25.4	Delco	Stmbg	Delco	C	3	117	32x4	C	†1295	1265	1295	....	....	....	....
PATHFINDER																		
3-A, B, C	12-2½x5	39.7	Delco	Stmbg	Delco	DD	3	135	35x5	SS	3250	3250	3250	....	....	....	....
PEERLESS																		
56-2	8-3½x5	33.8	A.Kent	Special	A-Lite	DD	3	125	35x4½	SS	†2340	....	2340	2850	2900	3600	....
PIERCE-ARROW																		
38-C-4	6-4 x5½	38.4	Bosch	Own	Wsths	C	4	134	34x4½	QD	4800	4800	†4800	5900	....	....	....
48-B-4	6-4½x5½	48.6	Bosch	Own	Wsths	C	4	142	35x5	QD	5400	5400	5500	6800	....	....	....
66-A-4	6-5 x7	60	Bosch	Own	Wsths	C	4	147½	36x5½	QD	†6400	6400	6500	7800	....	....	....
PILOT																		
6-45	6-3½x5	23.4	Delco	Titan	Delco	DP	3	120	32x4	SS	†1295	1295	....	....	....	....	....
PREMIER																		
6-B	6-3½x5½	27.3	Delco	Johnson	Delco	DP	3	125½	35x4½	SS	‡285	....	2285	....	....	....	....
PRINCESS																		
4-36	4-3½x4½	22.5	Splitdf	Schebler	Disco	D	3	108	32x3½	..	825	825	‡825	....	....	....	....
REGAL																		
J	4-3½x4½	19.6	A.Kent	Carter	A-Lite	C	3	108	30x3½	QD	....	795	....	....	....	....	....
REO																		
M	6-3½x5½	30.4	Remy	Rafld	Remy	DD	3	126	34x4½	SS	....	†1385	1385	....	1950	....	....
R	4-4½x4½	27.2	Remy	Johnson	Remy	DD	3	115	34x4	SS	‡985	985	....	....	....	....	....
ROAMER																		
R.A.	6-3½x5	23.4	Bosch	Stmbg	Bijur	DP	3	127	34x4	SS	2150	1850	....	....	....	....	....
ROSS																		
	8-3½x5	33.8	....	....	W.Lnrd	DD	3	130	35x4½	SS	‡1850	....	1850	....	....	....	....
SAXON																		
B-6-R	4-2½x4	12.1	A.Kent	Schebler	Wagner	DD	3	96	30x3	DC	395	....	....	....	....	....	....
S-4	6-2½x4½	19.8	Remy	Stmbg	Wagner	DD	3	112	32x3½	SS	935	935	....	1395	....	....	....
SAYERS	6-3½x4½	25.3	Delco	....	Delco	P	3	....	32x4	....	....	1295	....	....	....	....	....
SCRIPPS-BOOTH																		
D	8-2½x3½	22.0	Remy	Zenith	Wagner	DD	3	120	32x4	SS	†1425	....	....	....	....	....	....
G	4-3½x4	21.7	Remy	Zenith	Remy	C	3	110	30x3½	C	1250	....	....	....	....	....	....
SIMPLEX																		
5	6-4½x6½	45.9	Eisman	Nwcmb	Bosch	D	4	143½	37x5r	QD	Chassis	7000	....	....	....	....	....
SINGER																		
17	6-4 x5½	38.4	Bosch	Rafld	Wsths	DD	4	138	35x5	QD	3800	†3800	3800	....	....	4750	....
STANDARD																		
8	8-3½x5	33.8	Splitdf	Zenith	Apleo	D	3	127	35x4½	....	†1950	....	2000	....	2500	3500	....
STANLEY																		
Steamer	2-4 x5	....	....	....	....	..	.	130	35x4½	SS	‡2200	2200	2300	....	....	....	....
STEARNS																		
SKL4	4-3½x5½	22.5	Remy	Schebler	Wsths	DD	3	119	34x4	SS	†1785	1785	1925	2300	2385	3200	....
SK8	8-3½x5	33.8	Remy	Rafld	Wsths	DD	3	125	35x4½	SS	†2575	....	2575	3200	....	3875	....
STEPHENS																		
Salient Six	6-3½x4½	25.3	Delco	Stmbg	Delco	P	3	117½	32x4	....	‡1485	1485	....	....	....	....	....
STUDEBAKER																		1250
SF-4-40	4-3½x5	24.2	Remy	Schebler	Wagner	C	3	112	34x4	SS	‡1025	....	1050	....	....	....	1565
ED-6-50	6-3½x5	36.4	Remy	Schebler	Wagner	C	3	122	35x4½	SS	1335	‡1335	1385	1850	1850	2750	
STUTZ																		
S	4-4½x6	30.6	Bosch	Stmbg	Remy	C	3	130	32x4½	SS	2550	†2650	*2750	....	....	....	....
S.Bearcat	4-4½x6	30.6	Bosch	Stmbg	Remy	C	3	120	32x4½	SS	2550	....	....	....	....	....	....
SUN																		
17	6-3½x5	23.4	Remy	Rafld	Remy	DP	3	116	34x4	SS	†1345	1345	1345	....	....	....	....
VELIE																		
38	6-3½x4½	25.3	Remy	Rafld	Remy	DP	3	115	32x4	SS	1265	1265	†1265	....	1835	....	....
39	6-3½x5½	29.4	Remy	Rafld	Remy	DP	4	124	33x4½	SS	....	....	1595	....	....	....	....
WESTCOTT																		
S-18	6-3½x5½	29.4	Delco	Rafld	Delco	DD	3	125	35x4½	SS	†1890	1940	1940	2790	2790	....	....
WHITE																		
16-Valve	4-4½x5½	28.9	Bosch	Own	L.N.	P	4	{124½ 137½	33x4½ 37x5	QD	†4600	....	4600	5650	5650	5800	....
WILLYS-KNIGHT																		
88-4	4-4½x4½	27.2	Conn	Titan	A-Lite	C	3	121	34x4½	SS		..	1525	2175▲	2325▲	2225	....
88-8	8-3½x4	36.4	Remy	Zenith	A-Lite	C	3	125	34x4½	SS	†2550	...	2000	....	2700▲	2800	....
WILLYS																		
89-6	6-3½x5½	29.4	Conn	Titan	A-Lite	C	3	120	33x4½	SS	†1365	....	1365	....	2045	....	....
WINTON																		
33	6-3½x5½	33.7	Bosch	Rafld	Bijur	DD	4	128	36x4½	QD	2950	2950	3000	3865	4165	4165	....
48	6-4½x5½	48.6	Bosch	Rafld	Bijur	DD	4	138	37x5	QD	3500	3500	3500	4500	4750	4750	....

*6-passenger. †4-passenger. ‡3-passenger.

ABBREVIATIONS—"A-C" Allis-Chalmers, "L-N" Leece-Neville, "Titan" Tillottson, "Atzr" Atomizer, "Rech" Reichenbach, "DD" Dry Disk, "CU" Control Unit, "DP" Dry Plate, "G" Gearless, "F" Friction, "QDR" Quick Detachable Reversible, "R & M" Robbins & Myers. NOTE—37½x5½r means that the rear tires are 37x5½, and the front are smaller. Detachable top, 300x, means $300 extra.

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Denver Show Expected to Draw Big Attendance

DENVER, Nov. 10—Nearly 2000 motor car and accessory dealers and garagemen in the Rocky Mountain territory are expected to attend the motor show being held in the Denver Auditorium. Attractive invitations, accompanied by two admission tickets, have been sent out by the Automobile Trades Association. Manager George A. Wahlgreen believes that this plan will bring in a goodly number of tradesmen from distant points, and that it will also tend to influence the users of the complimentary tickets to arrange for larger delegations from their respective concerns.

There will also be a trade convention in connection with the show, and this is counted upon to create added interest. Railroads will give reduced rates for the week on the certificate plan, and a big attendance is expected from all parts of Colorado and from New Mexico, Wyoming and western Nebraska.

Motor Car Securities Quotations

	Nov. 10, 1917 Bid	Asked
*Ajax Rubber Co	50	52
*J. I. Case T. M. Co., pfd	..	80
Chalmers Motor Co. com	2	4
Chalmers Motor Co. pfd	..	50
*Chandler Motor Co	58½	60
Chevrolet Motor Co	57	60
*Fisher Body Corp. com	25	26
*Fisher Body Corp. pfd	70	80
Fisk Rubber Co. com	50	60
Fisk Rubber Co. 1st pfd	100	105
Fisk Rubber Co. 2d pfd	85	95
Firestone Tire & Rubber Co. com.	98	101
Firestone Tire & Rubber Co. pfd.	98	101
*General Motors Co. com	77½	88½
*General Motors Co. pfd	73	75
*B. F. Goodrich Co. com	35	36
*B. F. Goodrich Co. pfd	90	99
Goodyear Tire & Rubber Co. cm.	144	148
Goodyear Tire & Rubber Co pfd.	97	100
Grant Motor Car Corp.	2	3
Hupp Motor Car Corp. com	2¼	2¾
Hupp Motor Car Corp. pfd	82	88
International Motor Co. com	8	11
Internataional Motor Co. 1st pfd.	15	30
International Motor Co. 2d pfd.	6½	7½
*Kelly-Springfield Tire Co. com.	37	40
*Kelly-Springfield Tire Co. 1st pfd	78	81
*Lee Rubber & Tire Corp	12	14
*Maxwell Motor Co., Inc. com.	20½	21½
*Maxwell Motor Co., Inc. 1st pfd.	50	51
*Maxwell Motor Co., Inc. 2nd pfd.	13	14
Miller Rubber Co. com	120	130
Miller Rubber Co. pfd	98	101
Packard Motor Car Co. com	120	130
Packard Motor Car Co. pfd	94	97
Paige-Detroit Motor Car Co	18	20
Peerless Truck & Motor Corp.	9	11
Portage Rubber Co. com	115	120
Regal Motor Car Co. pfd	10	20
Reo Motor Car Co	17	19
*Saxon Motor Car Corp	4	5
Springfield Body Corp. com	..	..
Springfield Body Corp. pfd	..	..
Standard Motor Construction Co.	6½	7½
Standard Parts Co	..	76
*Stewart-Warner Speed. Corp	44	46
*Studebaker Corp. com	35	36½
*Studebaker Corp. pfd	..	93
Swinehart Tire & Rubber Co	..	40
United Motors Corp	15	15½
*U. S. Rubber Co., com	50½	52
*U. S. Rubber Co. pfd	95	98
*White Motor Co	34	37
*Willys-Overland Co. com	16	16½
*Willys-Overland Co. pfd	71	75

*At close Nov. 10, 1917. Listed New York Stock Exchange.

Coming—THE SHOW CALENDAR—*Events*

Shows

Los Angeles, Cal.	Motor Car Dealers' Assn., Billy Sunday Tabernacle. J. S. Conwell, Mgr.	Nov. 12-17
Denver, Col.	Automobile Trades Assn., Show Committee, Auditorium. G. A. Wahlgreen, Mgr.	Nov. 12-18
Springfield, Mass.	Auditorium Building, United Shows Co.	Dec. 3-9 1918
Ft. Dodge, Ia.	Ft. Dodge Auto Dealers' Assn. G. W. Tremain, Mgr.	January
New York, N. Y.	Salon, Automobile Salon, Inc., Astor Ballroom. John R. Eustis, Mgr.	Jan. 2-9
New York, N. Y.	Eighteenth Annual, Automobile Chamber of Commerce, Grand Central Palace.	Jan. 5-12
Kansas City, Mo.	Third Annual Tractor Show	Jan. 11-16
Washington, D. C.	Carnival and Open House Week Automobile Trade Assn. of Washington.	Jan. 11-18
Providence, R. I.	R. I. Licensed Auto Dealers' Assn., State Armonry. Percival S. Clark, Mgr.	Jan. 11-19
Philadelphia, Pa.	Seventeenth Annual, Philadelphia Auto. Trade Assn., Commercial Museum Bldg.	Jan. 11-19
Milwaukee, Wis.	Milwaukee Automobile Trades, Inc. Auditorium. Bart J. Ruddle, Mgr.	Jan. 13-24
New York, N. Y.	Motor Boat Show, Grand Central Palace, National Assn. of Engine & Boat Manufacturers.	Jan. 19-26
Montreal, Can.	National Motor Show of Eastern Canada. Montreal Automobile Trade Assn.	Jan. 19-26
Cleveland, O.	Seventeenth Annual, Cleveland Automobile Show Co., Wigmore Coliseum. Fred H. Caley, Mgr.	Jan. 19-27
Scranton, Pa.	Scranton Motor Trades Assn., Armory. Hugh B. Andrews, Mgr.	Jan. 21-26
York, Pa.	York Auto Dealers' Assn., Queen St. Tabernacle. T. F. Pfeiffer, Sec.	Jan. 21-26
Portland, Ore.	Motor Car Dealers' Assn., Armory. Jos. M. Rieg, Mgr.	Jan. 21-26
Mifflintown, Pa.	Automobile Trade Assn., Valley Stream Auditorium.	Jan. 22-26
Allentown, Pa.	Lehigh Auto. Trade Assn., Traylor Motor Co.'s Garage. P. W. Leisering, Publicity Mgr.	Jan. 23-28
Chicago, Ill.	Eighteenth Annual, Coliseum and Armory, National Automobile Chamber of Commerce.	Jan. 26-Feb. 2
Harrisburg, Pa.	Capital City Motor Dealers' Assn. J. Clyde Myton, Mgr.	Jan. 26-Feb. 2
Chicago, Ill.	Salon, Elizabethan Room of Congress Hotel.	Jan. 26-Feb. 2
Manchester, N. H.	Academy. Couture Bros.	Jan. 28-Feb. 2
Peoria, Ill.	Peoria Auto and Accessories Dealers' Assn. W. O. Ireland, Mgr.	February
Minneapolis, Minn.	Minneapolis Auto. Trade Assn., Walter B. Wilmot, Mgr.	Feb. 2-9
Kansas City, Mo.	Kansas City Motor Car Dealers' Assn., E. E. Peake, Mgr.	Feb. 9-16
St. Louis, Mo.	St. Louis Auto Mnfrs. & Dealers' Assn. Robert E. Lee, Mgr.	Feb. 11-16
Newark, N. J.	N. J. Auto Exhibition Co., First Regiment Armory. Claude E. Holgate, Mgr.	Feb. 16-23
San Francisco, Cal.	San Francisco Dealers' Assn., Exposition Auditorium. G. A. Wahlgreen, Mgr.	Feb. 16-24
Waterbury, Conn.	United Shows Co.	Feb. 18-23
Des Moines, Ia.	Des Moines Automobile Dealers' Assn., Coliseum. C. G. Van Vliet & Dean Schooler, Mgrs.	Feb. 18-23
Syracuse, N. Y.	Syracuse Automobile Dealers' Assn., State Armory. Harry T. Gardner, Mgr.	Feb. 18-23
Grand Rapids, Mich.	Automobile Business Assn., Klingman Building. Ernest T. Conlon, Mgr.	Feb. 18-23
Springfield, O.	Springfield Auto Trades Assn., Memorial Hall. C. S. Burke, Mgr.	Feb. 18-23
Pittsfield, Mass.	State Guard, State Armory. James J. Callagan, Mgr.	Feb. 18-23
So. Bethlehem, Pa.	Fourth Annual (cars 18-23; trucks 25-27), Coliseum. J. L. Elliot, Mgr.	Feb. 18-27
Brooklyn, N. Y.	Brooklyn Motor Vehicle Dealers' Assn., Twenty-third Regiment Armory. I. C. Kirkham, Treas.	Feb. 22-Mar. 9
	Commercial Vehicles	Feb. 2-9
Cedar Rapids, Ia.	Cedar Rapids Auto. Trade Assn., Auditorium.	March
Kalamazoo, Mich.	Kalamazoo Automobile Dealers' Assn., Armory.	March
Omaha, Neb.	Omaha Auto. Trade Assn., Auditorium, Clark G. Powell, Mgr.	Feb. 23-Mar. 2
Boston	Boston Automobile Dealers' Association, Mechanics Building. Chester I. Campbell, Mgr.	Mar. 2-9
San Francisco, Cal.	Motor Truck Dealers of San Francisco, Auditorium. Ivan R. Gates.	Mar. 19-24
Trenton, N. J.	Trenton Auto Trade Assn., Second Regiment Armory. John L. Brock, Mgr.	Mar. 20-23
Stockton, Cal.	San Joaquin Auto Trade Assn. Samuel S. Cohn, Mgr.	Apr. 9-13

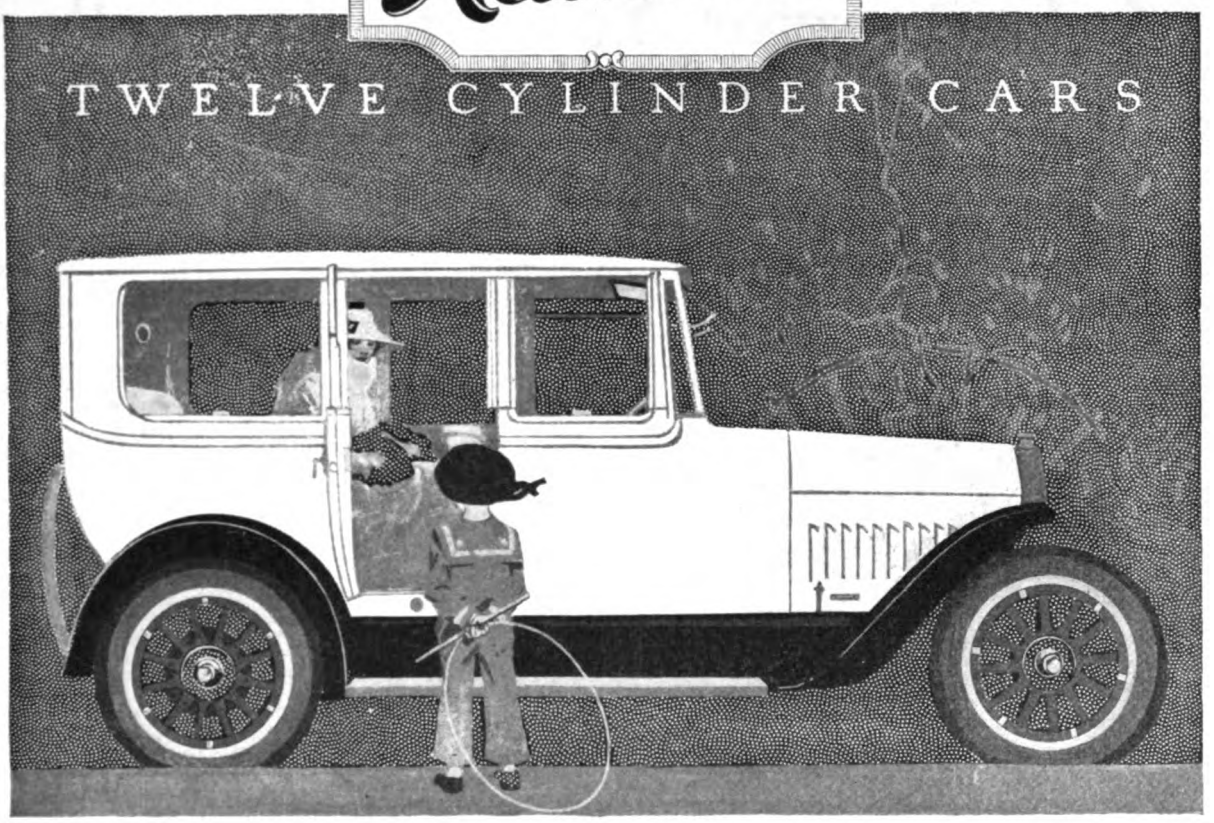
General and Racing

New York	Convention, National Assn. of Auto Accessory Jobbers, Hotel Astor.	1918 Feb. 11-16

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National

TWELVE CYLINDER CARS



A TRUE TOURING SEDAN

—with airplane type motor

IMAGINE a luxurious closed car, finely appointed as a limousine, which in an instant can be altered with ease into a regular touring model.

Imagine, again, this car powered with so serenely competent a motor as to make it as capable for sustained cross-country touring as for dignified city use.

Such a car is the new twelve-cylinder (airplane type) National Touring Sedan.

In usefulness and value, in capacity and quiet elegance, it caps the manufacturing endeavor of our seventeen fruitful years.

This new National Touring Sedan seats seven passengers; it is very solidly and carefully built and entirely free from any annoying rattle.

It is upholstered in the highest quality of fine gray whipcord, and its appointment is unusually elaborate and complete.

Its conversion into a regular touring model is a matter of seconds only, the crystal panels disappearing into the body of the car.

Most important of all, this new National Touring Sedan is a *performing* closed car.

The smooth, able and unfailing twelve-cylinder airplane type National motor assumes the slightly heavier Sedan carriage without effort.

It links the luxury and shelter of the fine closed car to the spirit and activity of an open model.

This new National Touring Sedan offers to its owner enjoyable travel in any season, under any weather, on any roads.

And to dealers it offers an opportunity for undiminished sales during the cold months.

NATIONAL MOTOR CAR & VEHICLE CORPORATION . INDIANAPOLIS
Seventeenth Successful Year

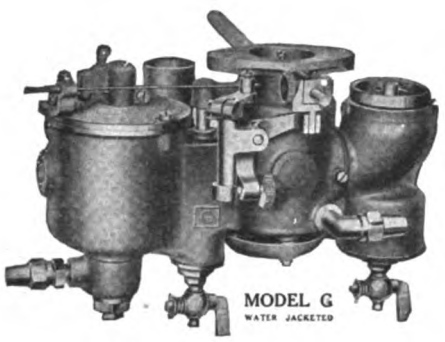
Complete Range of Body Styles in Both

Six and Twelve Cylinder Models

7-Passenger Touring Car, 4-Passenger Sport Phaeton, 4-Passenger Roadster, Convertible Sedan
The Six Sedan $2820. The Twelve Sedan $3420. Open Car Prices—The Six $1995, The Twelve $2595
Government's War Revenue Tax Extra Charge

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A Carburetor You Can Honestly Guarantee



That's saying a lot; but it's true if you're the Rayfield man in your community.

And it means much to you to be able to end carburetor troubles for your customers—particularly in winter, when poor carburetion shows up at its worst.

Because today the Rayfield is being constructed so that it is trouble-free the year 'round; and it is frugal with fuel the year 'round, too.

You sell it upon a definite guarantee to that effect, and a guarantee of easy starting, brisk acceleration, lower throttling, more power and more speed.

You can talk confidently when you talk Rayfield; our guarantee is back of what you say.

Better write us for more information about our proposition to dealers; there's a big opportunity for you with us.

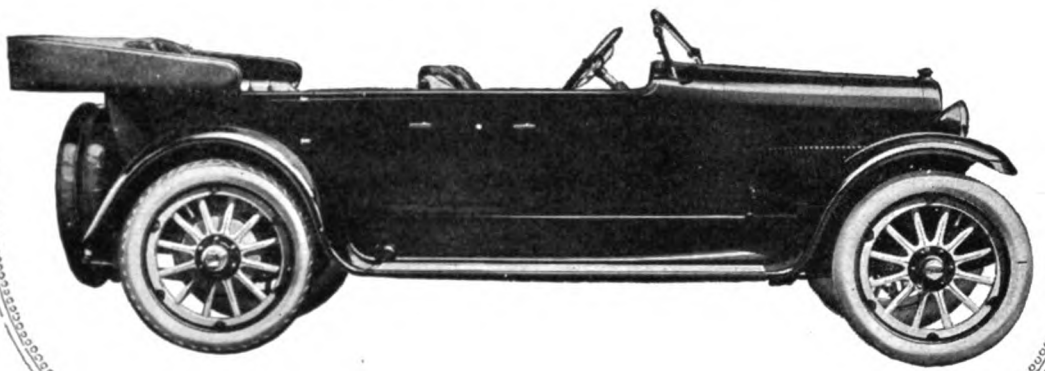
FINDEISEN & KROPF MFG. CO.

2101 Rockwell St. Chicago

RAYFIELD CARBURETOR

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CASE SIX



No Dearth of Talking Points in Selling the New Case Six

It is unnecessary to restrict your selling talk to one or two features and hold the customer's attention to these alone.

For the New Case Six is an *all*-feature car, uniting in one automobile all the wanted improvements. Case engineers searched all motordom, appraising the different advantages of high-priced cars. By a process of elimination, a master car was designed. The price came later.

It is the sort of a car you would build yourself if given free rein. You would want an all-'round car like this.

Proven Features

In first building the New Case Six and then setting the price, you realize that Case engineers chose the costliest and finest features without regard to price.

Yet when it came to naming the price, it was a surprise to all. Most men expected it would be around $2500, but Case buying and producing power enabled us to lower this figure materially.

The New Case Six makes a tremendous appeal to dealers. It offers them a car for their customers that is far and away the finest car on the market for the money. Every dealer who has become acquainted with the New Case Six is highly enthusiastic.

A Great Appeal

You can meet every want, every requirement. And you can compare this Case Six with cars costing much more. Its over-values are apparent.

The New Case Six is offered in the Family Model for seven or five people, color dark blue, price $1,875; the Sport Model, for four people, color periscope green, price $1,875; and the All-seasons Model, Springfield type, color dark blue, at $2,375.

DEALERS: A limited number of keen business men may obtain this Case Six for their patrons. Perhaps you can arrange to participate with us. If you will write we will gladly tell you.

To dealers who desire a superior car for their patrons, we will be glad to explain our proposition. It is very attractive from a financial standpoint.

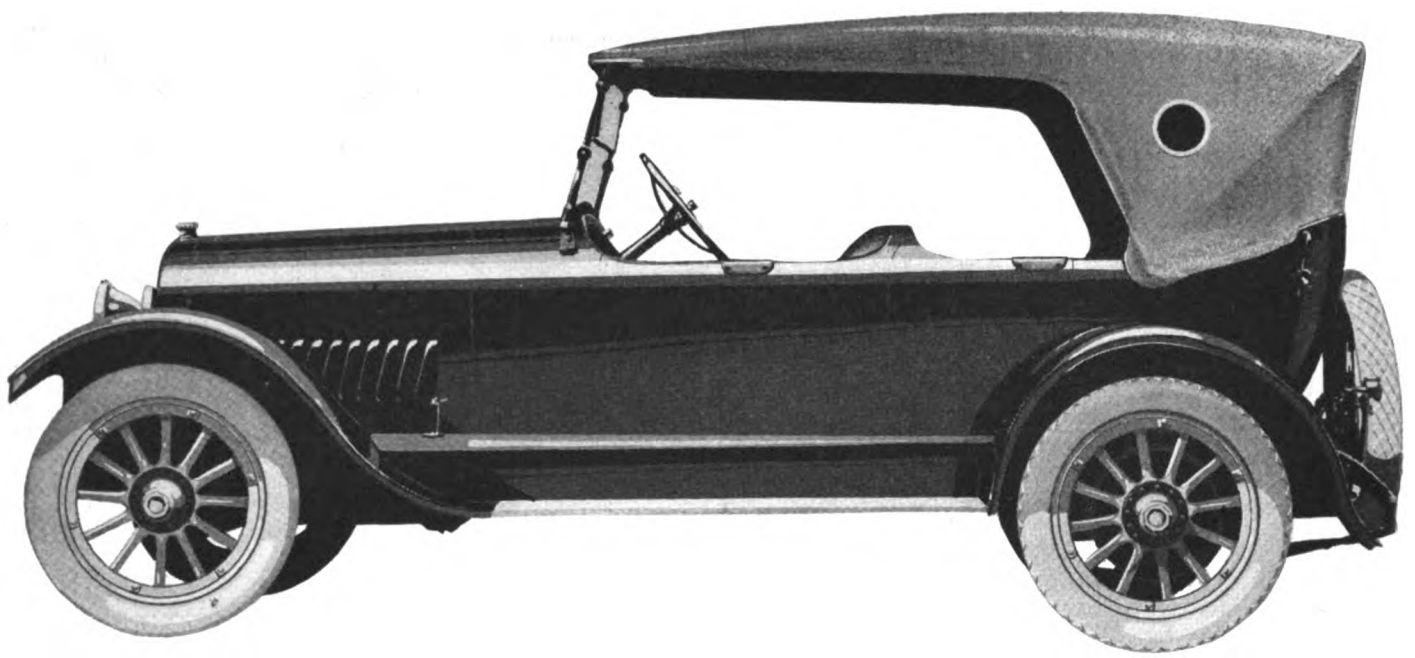
In writing to us, please state something regarding your facilities, so that we may judge whether an arrangement with you would be of mutual benefit.

CASE

J·I·CASE T·M·CO·INC·*Founded 1842* 180 LIBERTY ST·RACINE, WIS·

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STEPHENS
Salient Six



FOUR PASSENGER

Roomy for four passengers; low; speedy looking; a fineness of equipment; the perfected type of four-passenger design. With its Semi-Victoria top, its Saginaw Red finish, its natural wood wheels, it again answers Stephens ideals—the car of conservative individuality.

Possessor of the Perfected Overhead-Valve Engine that Burns All the Gasoline.

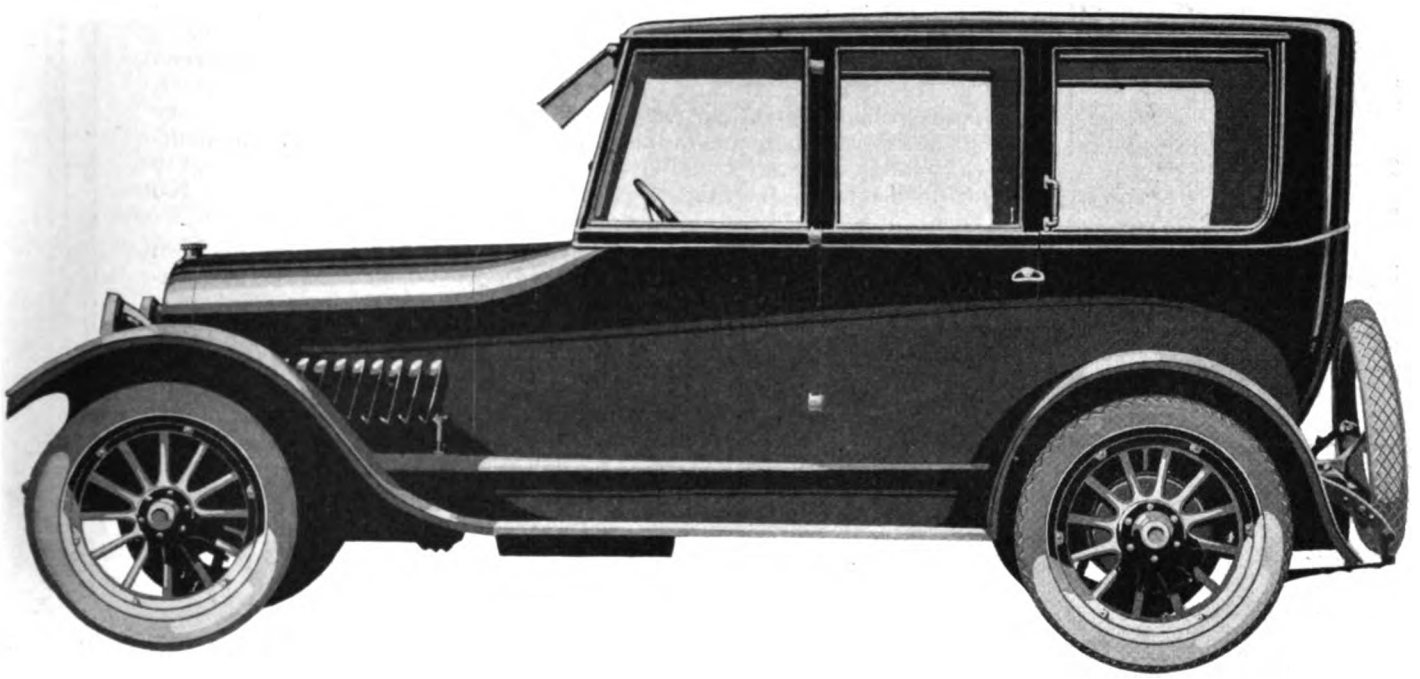
Price $1,550 F. O. B. Factory

STEPHENS MOTOR BRANCH

Sales Office: Moline, Illinois

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IN TWO NEW MODELS



TOURING SEDAN

Stephens design—not built under license. The harmony of lines; the Stephens hand finish as usual. The one sedan which is positively weather proof. Whipcord upholstery, divided front seats, Yale locks in the doors—there is nothing lacking, and many new refinements added. It is the complete sedan, on a chassis renowned for *ability.*

Price $1,985 F. O. B. Factory

OF MOLINE PLOW COMPANY

Factory: Freeport, Illinois

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Westcott

All-Season Bodies with an All-Season Chassis

FOR winter driving there is no car quite like a Westcott Convertible Sedan or Coupe. Storm-tight from wind-shield to rear window, warmed by a Perfection heater, lighted by electricity, upholstered in deep, rich, gray wool fabric laid on in French pleats without buttons, with carpet of worsted and robe rails of silk in harmonious shade, the Westcott Convertible is the winter car *de luxe*.

The thermometer stands at zero. The driver enters his compartment at the door on the left. His passengers enter the rear compartment direct through the curb door. The perfect coordination between the Rayfield Carburetor and the Delco System insures a quick start. Away rolls the great car without a cough or sputter. As the frosty air sweeps through the radiator the Westcott Thermostat *automatically* holds the water valve closed until the engine is thoroughly warmed up. Every drop of gasoline expresses itself in motion. No energy is wasted heating water or lubricant.

There are no grease cups in the Westcott chassis. Soft oil, from wick-fed oil cups, flows automatically to every bearing. The lubrication is as perfect on Christmas morning as on the Fourth of July.

When the caprices of spring and autumn make necessary the quick change from closed to open or *vice versa*, the convenience and simplicity of these custom-built coaches cannot fail to be a source of boundless satisfaction. And the delight of summer touring finds its climax in the Westcott Convertible with all windows wide open, leaving not even a suggestion as to their places of concealment.

PRICES F. O. B. SPRINGFIELD, OHIO

Seven or Five Passenger Convertible Sedan	$2790
Four Passenger Convertible Coupe	2790
Seven or Five Passenger Touring Car	1940
Four Passenger Touring Roadster	1890

Correspondence with dealers capable of maintaining the Westcott standards in unoccupied territory is always welcome.

THE WESTCOTT MOTOR CAR COMPANY
SPRINGFIELD, OHIO, U. S. A.



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Selden Trucks

IN-BUILT QUALITY · SELDEN · MOTOR TRUCKS

Buy a Motor Truck Now

Conserve the man power of the nation. A serious labor shortage must come. One man with a motor truck can do the work of three or four with a slow, costly horse-drawn vehicle.

Conserve the freight cars. The government needs them now. And the rapidly increasing business of the nation is greater than the railroads and express companies can properly handle. This means delayed deliveries and dissatisfied customers.

The time has come when business men who would progress must make preparations for the transportation of their own merchandise. And the installation of a dependable motor truck is the logical solution of the problem.

Thousands of business concerns know the economy of Selden Trucks—for they are profiting daily by their use. The testimony of a long list of well satisfied Selden users substantiates this fact.

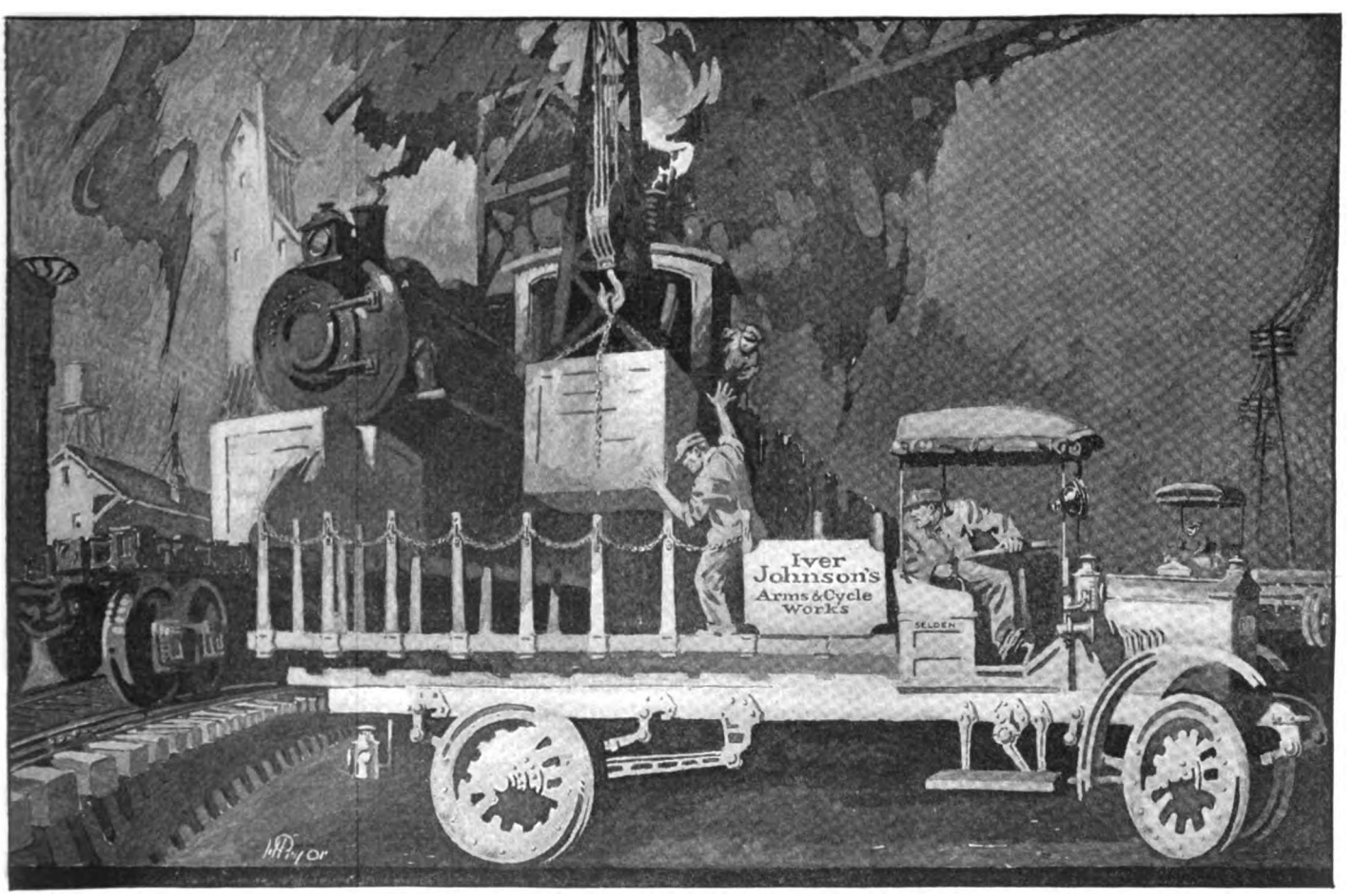
Selden Trucks are big and powerful in construction—heavier and stronger than other trucks of the same rated capacity and made from better materials. They never fail to haul the load without interruption, with low consumption of gasoline and oil, and at an exceedingly low cost of upkeep.

Buy a Selden Truck now while you can get an immediate delivery. Don't wait until the factory is oversold or freight car shortage prevents prompt delivery. "Buy a SELDEN—It's ALL Truck." Write for full information on the model best adapted to your business.

Dealers: *The rapidly increasing need for motor trucks opens up an unusual opportunity for you to make money on their sale. If you are not handling a line of motor trucks now and Selden Trucks are not being sold in your locality, write or wire at once for our Sales Proposition.*

Selden Truck Sales Company

Rochester, N. Y., U. S. A.



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A Tube As Good As Its Casing

Every one knows that Republic Tires outlast other tires because of the Prōdium process of toughening the rubber.

Republic Gray Tubes are worthy of the casing that contains them.

They are built to outlast Republic Tires.

There actually is extra strength and extra thickness in Republic Tubes.

This is what gives them their wonderful stretching quality.

They are made in plies of selected sheets of Para Rubber built layer upon layer.

This process insures pefect protection against any possible flaws that might develop in one ply.

Further protection, at a point where weakness in a tube often develops, is given by our welded-splice.

We long ago abolished the acid cure process of splicing.

We improved upon it with our own perfected process of a steam-cured splice, which is in effect a welded union stronger than the tube itself and joint-perfect.

That is why Republic Tubes last longer

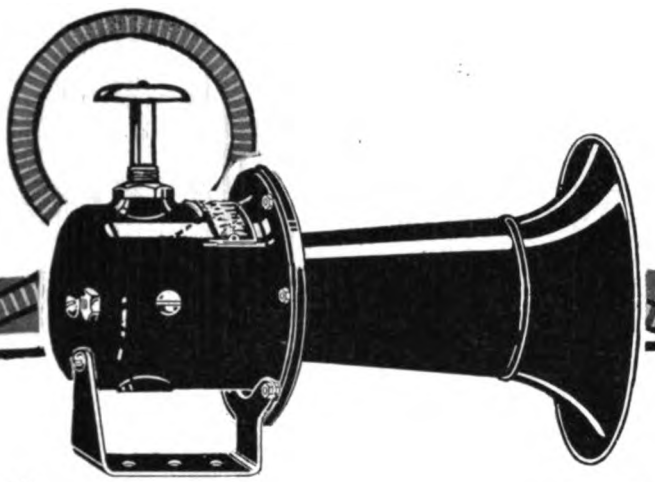
The Republic Rubber Company
Youngstown, Ohio

Originator of the First Effective Rubber Non-Skid Tire
Republic Staggered Tread



REPUBLIC TUBES

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Klaxon-3-V

■■■

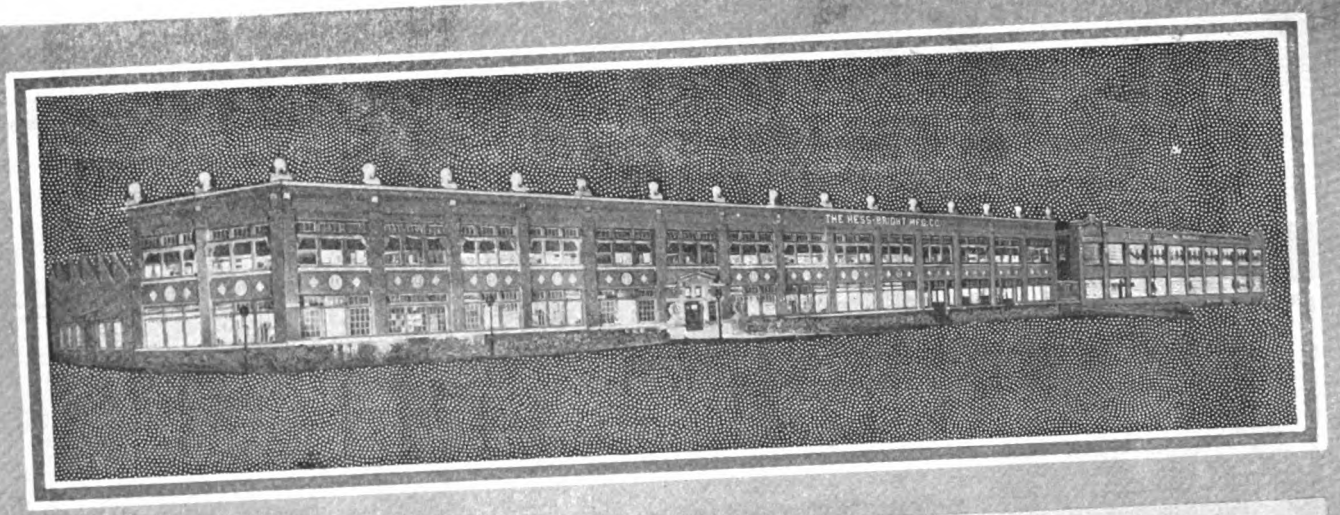
There is a Klaxon for every purpose every preference *and* every purse—

■■■

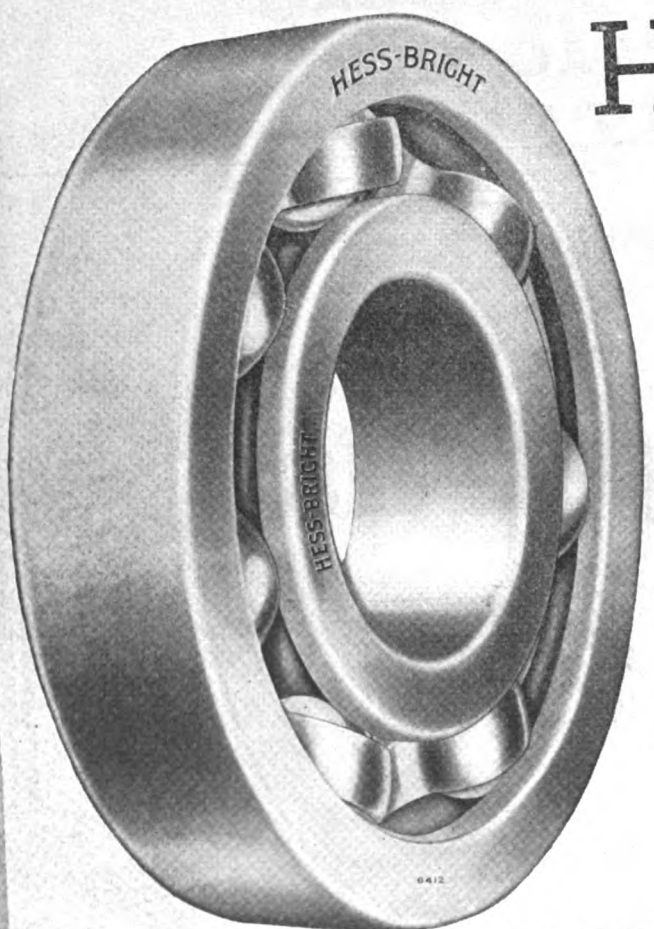
Vertical Push

$3.50

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HESS-BRIGHT BALL BEARINGS



HAVE turned millions of revolutions on thousands of machines of hundreds of types for scores of purposes, standing millions of pounds of radial and thrust pressure.

They have done this in all climes, under varying conditions, with and without proper care, properly and improperly mounted or applied—*and they have stood up under it all.*

Thus they are carrying industry's burdens to the greater benefit of mankind.

Such is their reward. Their virtues have been proved. They have stood the test of time's worst task-master—Service.

Select the right Hess-Bright for *your* need and *your* bearing problems are solved.

Let our engineers aid you in the solution of your problems.

HESS-BRIGHT'S CONRAD PATENTS ARE THOROUGHLY ADJUDICATED

HESS-BRIGHT MANUFACTURING COMPANY

FRONT STREET AND ERIE AVENUE PHILADELPHIA, PA.

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OVER 600,000 PAIRS

That is the Conaphore Sales Record for Only Four Months

You see those yellowish-tint headlights everywhere. More than 600,000 pairs were sold during June, July, August and September. Ask users of Conaphores what they think of them. That will explain why the Conaphore far outsells all other headlight glasses.

The Conaphore is basically different from every other glass. Devices which diffuse the light greatly reduce range and obviously cannot comply with restrictions limiting the height of the beam. Tilted headlights and ordinary prismatic lenses reduce glare to some extent, but sacrifice range.

Overcomes All Difficulties

The Conaphore designers recognized these shortcomings and overcame them. Thus the Conaphore gives the longest possible range, and at the same time eliminates all glare. It gives you 500 feet of road light. And range is what you need most. Conaphores comply with all no-glare laws, and are passed by every state in the Union and all provinces in Canada.

Pierces Snow and Fog

With Conaphores you have another important advantage that motorists never before thought possible. You can drive through flurrying snow or thick fog at 20 to 25 miles per hour in perfect safety.

This is true because the Noviol glass, of which Conaphores are made, absorbs the blue and violet waves which are present in all white light and which cause "back-glare." Thus blurring of your vision is avoided. This yellowish-tint glass is patented and used only in Conaphores.

Don't be deceived by the claims that other devices are as efficient as the Conaphore. No other device possesses all the Conaphore features. You owe it to yourself, as well as the motoring public and pedestrians to equip your car with Conaphores.

Also Made In Clear Glass

Conaphores are made of clear glass, as well as Noviol glass. Clear glass Conaphores are equally efficient in giving long range and preventing glare, but lack the added advantage of eliminating "back-glare" and penetrating snow and fog. We strongly recommend the Noviol.

Winter Business—Cold Weather Made Profitable

Dealers—Fall sales are continuing at a strong pace. We are going to keep up our national advertising in the *Saturday Evening Post* and other mediums throughout the fall and winter. There is bound to be lots of business in Conaphores—get in touch with us at once if you want your share.

PRICE LIST

Noviol Glass	Per Pair	Clear Glass	Per Pair
3 to 4⅞ inches incl.	$1.30	3 to 4⅞ inches incl.	$0.80
5 to 6⅞ inches incl.	2.40	5 to 6⅞ inches incl.	1.60
7 to 8½ inches incl.	3.50	7 to 8½ inches incl.	2.50
8⅝ to 10 inches incl.	4.50	8⅝ to 10 inches incl.	3.00
10⅛ to 11½ inches incl.	6.00	10⅛ to 11½ inches incl.	4.00

Sizes vary by steps of ⅛ inch above 6½ inch size.
Price 25c. more per pair west of Rocky Mountains.

CONAPHORE SALES DIVISION
EDWARD A. CASSIDY CO., Inc., Managers
Madison Avenue and 40th Street, : : : New York City

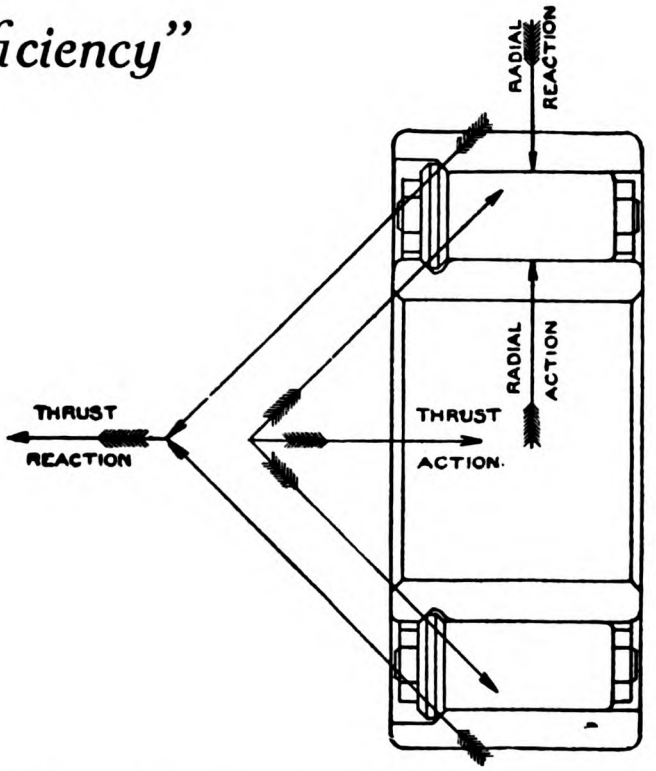
CORNING GLASS WORKS



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BOWER SAVES POWER

"Bearing Efficiency"



That foremost principle of efficiency, i.e., proper division of labor, is applied correctly only in the Bower Bearing. Two **separate** line surfaces are provided for the two kinds of thrust encountered. The roll supports the constant vertical load; the flange sustains the occasional end thrust. This efficiency of Bower design naturally results in superiority of performance.

BOWER
ROLLER BEARING CO.
Detroit Michigan

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RACINE
Country Road & Multi-Mile Cord
TIRES

Quality *and* National Advertising



SUCCESS!

Now *national advertising* in The Saturday Evening Post, The Country Gentleman, and other publications, brings even greater success for the dealers who sell *Racine Country Road* and *Multi-Mile Cord* Tires.

Without a line of national advertising, dealers handling *Racine Rubber Company* quality tires—the *Country Road;* the *Multi-Mile Cord*—have always made money by being able to offer proved quality to the automobilists in their trade areas.

And now—with *Racine Country Road* and *Multi-Mile Cord* Tires backed by a really big campaign in The Saturday Evening Post—The Country Gentleman—in leading farm papers—no wonder dealers are quick to tie up with this exceptional opportunity for profit.

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National Advertising with Real Sales Strength

A Triumph for dealers selling RACINE Country Road and Multi-Mile Cord Tires



How About Your Tire Profits?

Are you content to let this unusual money-making opportunity slip by without investigating it? Are you satisfied you are making the money you should?

Racine Rubber Company's national advertising strikes a new note in tire advertising—gives real proof of extra quality and extra service in *Racine Country Road* and *Multi-Mile Cord* Tires.

Dealers selling *Racine Country Road* and *Multi-Mile Cord* Tires are the most prosperous tire dealers everywhere. Now—national advertising brings them even greater profit.

Distributors at Convenient Points

Racine Rubber Company distributors—all top-notch tire men—are conveniently located at all principal distributing points. They are equipped to give you prompt deliveries and efficient co-operation.

Dealers are rapidly making their connections. Are you going to wait longer—and then regret it?

A connection with *Racine Rubber Company*, through a *Racine Rubber Company* distributor, is worth thousands of dollars. Use the coupon to get details. Mail it today.

Racine Rubber Company
Dept. 11 Racine, Wis.

Send Coupon at Once!

RACINE RUBBER COMPANY
Racine, Wis.

Please furnish through the nearest *Racine Rubber Company* distributor, details of the *Racine Country Road* and *Multi-Mile Cord* Tire opportunity, with the understanding that I am in no way obligating myself.

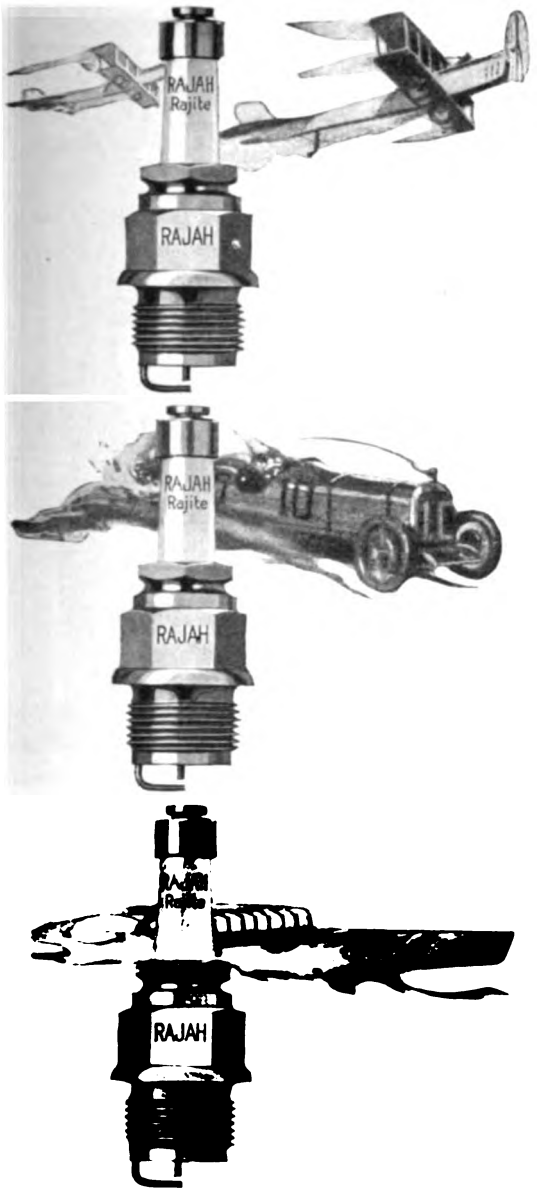
Name.....

Address.....

City..... *State*.....

(11)

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Supreme Afloat Ashore and in Mid-air

Rajah Spark Plugs are in their element in any element. Afloat, ashore and in mid-air, wherever the gas engine is put to the supreme test of power, speed and reliability, Rajah Spark Plugs are supreme.

These same Rajah plugs that are the choice of racing car drivers, airplane pilots and speed-boat builders and owners, are available for your trade. Can you ask a stronger endorsement or a surer proof of quality and service? Get a supply of Rajahs for the car owners in your locality.

RAJAH *SPARK PLUGS*

RAJAH TERMINALS AND ADAPTERS

are furnished so that Rajah Plugs can be used on any car not equipped with the Rajah type of Clip Terminal. Any size exchanged if desired



Rajah Regular Clip Terminal
Adjustable to any cable. With the extra collar supplied fits any make of plug.



Rajah Thumb Nut Terminal
Adapter for Dodge, Ford, Hup, Hudson, Maxwell, Mitchell, Packard Twin Six, Pullman.



Rajah Ferrule Clip Terminal
With any size ferrule required. Fits any make of plug with the extra collar supplied.



Rajah Packard Terminal
Adapter for Packard 4 and 6 cylinder.



Rajah Stud Terminal
Adapter for Buick, Chevrolet, Oldsmobile.



Rajah Ball Terminal
Adapter for Franklin.
Special type for Willys-Knight.

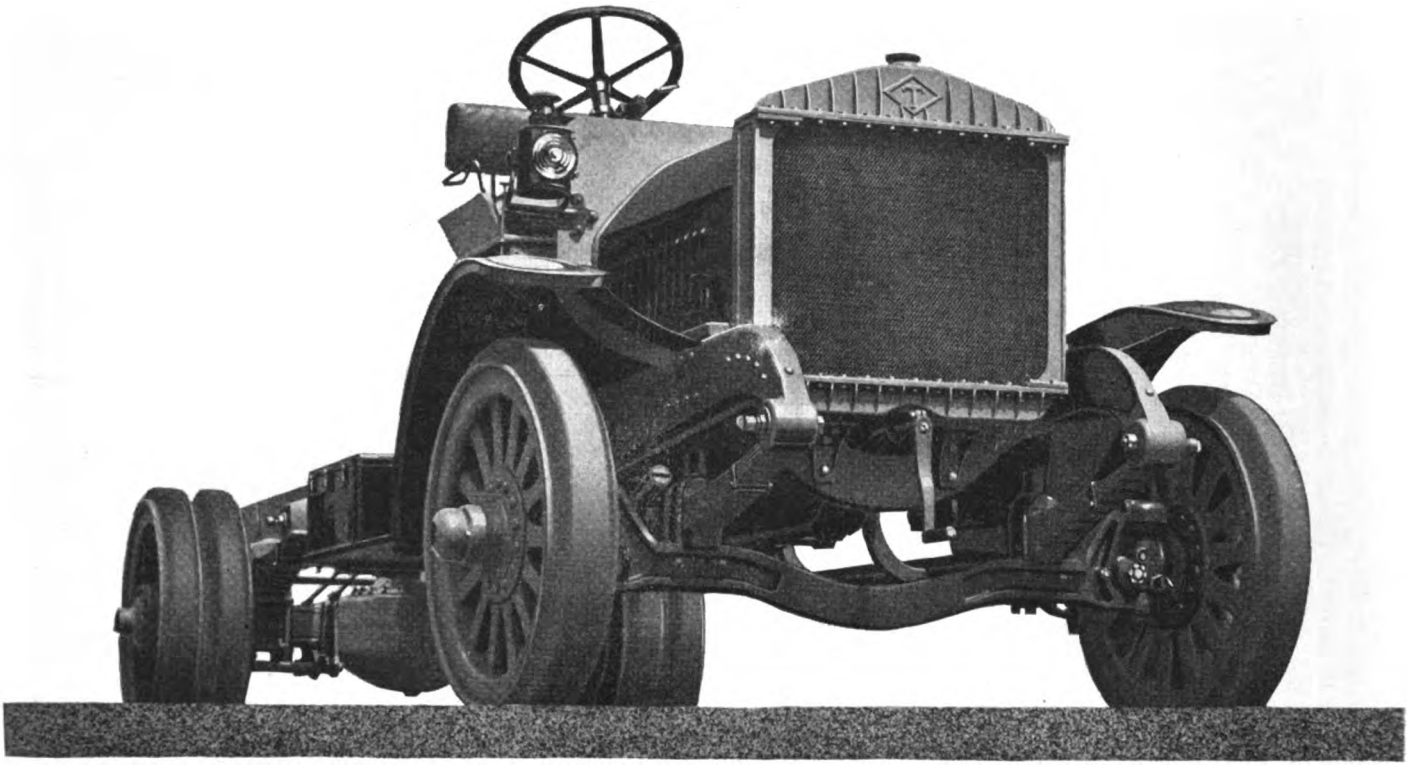


Rajah Priming Plug

Address RAJAH, *Bloomfield, N. J.*

HUGHSON & MERTON, Inc., San Francisco, Los Angeles, Portland, Seattle. JOHN MILLEN & SON, Ltd., Montreal, Toronto

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DIAMOND T Trucks

An Opportunity for Pleasure Car Dealers

National economy is bringing increased truck sales.

Stop worrying about the demand for pleasure cars. The agency for DIAMOND T Trucks will keep your sales up to normal.

Famous the country over as "the truck that has never worn out."

Made in five standard sizes—the acknowledged leader in strength and simplicity.

Nationally advertised. Made in the finest truck factory in America.

Increased capacity enables us to assure *immediate deliveries.*

Very attractive dealer proposition sent on request.

Five Sizes Now Ready

Model J-5 One Ton.....$1725	Model J-3 Two Tons.....$2475
Model J-4 One and One-half Tons 2200	Model L-B Three and One-half Tons 3750

Model R Five Tons.....$4600

F.O.B. Chicago

Diamond T Motor Car Company

4507 W. 26th Street **Chicago**

When writing advertisers please mention Motor World—It identifies you

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Atwater Kent Equipped Franklin Car Sets New World's Record for Gasoline Mileage



This Franklin Car, having the standard Atwater Kent Type K-2 Equipment, and driven by Cowles Tolman, of New Haven, Conn., established a new world's record for a stock car, running 82.8 miles on one gallon of gasoline

ATWATER KENT

SCIENTIFIC IGNITION

ON July 13, 1917, one hundred and seventy-nine Atwater Kent equipped Franklin cars, participating in the Franklin National Efficiency Demonstration in all parts of the United States, recorded an average of 40.3 miles to a gallon of gasoline.

Atwater Kent Ignition was a big factor in the establishment of this new world's record for gasoline mileage. Its hot dynamic spark and maximum power impulses make for velvety acceleration, reduced gear shifting and motor stalling, and easier starting.

Consider these facts when selecting the ignition system you will offer your trade—that Atwater Kent Ignition has been adopted by over thirty manufacturers as standard equipment, that it is extensively advertised, that it enjoys a reputation for quality based on a manufacturing experience of fifteen years. *Write in for our dealer offer.*

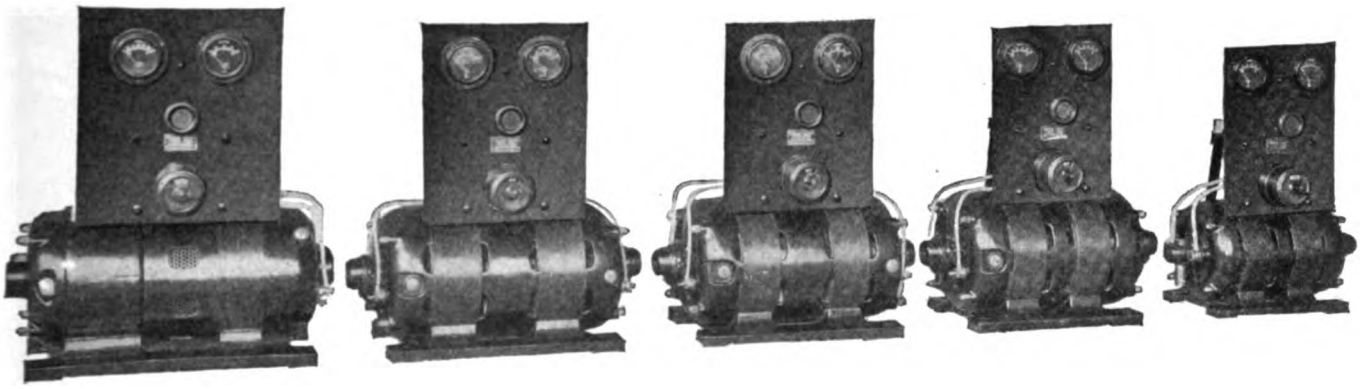
ATWATER KENT MFG. WORKS
Philadelphia

WRITE FOR INFORMATION TO 4940 STENTON AVENUE, PHILADELPHIA, PA

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Which One Meets Your Battery Charging Requirements?

This is the complete line of G-E ignition and lighting battery charging outfits.

If you want to charge only one 6-volt battery at a time, get the smallest set; or if your maximum requirement calls for the charging of a 72-volt battery, you can get the largest size.

The motor-generator and control are neatly arranged as a single unit. A turn of the control handle gives you any required charging current at a moment's notice. The wide voltage regulation makes it possible to charge any battery quickly and properly. The voltmeter and ammeter will tell you just what the charging conditions are, at all times.

The current regulation is such that even in the hands of unskilled operators the battery cannot be injured.

Garages are using G-E Motor-generator Sets more extensively every year—the chief advantages being simplicity and compact arrangement and the absolute reliability obtained with practically no attention.

These sets are also ideal for private garages, and garages located in industrial plants.

Thousands of these sets are giving highly satisfactory service, in all kinds of small battery charging work.

Ask our nearest office for further information on the G-E Motor-generator Set for charging starting, lighting and ignition batteries.

General Electric Company

Atlanta, Ga.
Baltimore, Md.
Birmingham, Ala.
Boston, Mass.
Buffalo, N. Y.
Butte, Mont.
Charleston, W. Va.
Charlotte, N. C.
Chattanooga, Tenn.
Chicago, Ill.
Cincinnati, Ohio
Cleveland, Ohio
Columbus, Ohio
*Dallas, Tex.
Dayton, Ohio
Denver, Colo.
†Detroit, Mich.
Des Moines, Iowa
Duluth, Minn.
Elmira, N. Y.
Erie, Pa.
*El Paso, Tex.
Fort Wayne, Ind.
Hartford, Conn.

General Office: Schenectady, N. Y.

ADDRESS NEAREST CITY

*Houston, Tex.
Indianapolis, Ind.
Jacksonville, Fla.
Joplin, Mo.
Kansas City, Mo.
Knoxville, Tenn.
Los Angeles, Cal.
Louisville, Ky.
Memphis, Tenn.
Milwaukee, Wis.
Minneapolis, Minn.
Nashville, Tenn.
New Haven, Conn.
New Orleans, La.
New York, N. Y.
Niagara Falls, N. Y.
*Oklahoma City, Okla.
Omaha, Neb.
Philadelphia, Pa.
Pittsburg, Pa.
Portland, Ore.
Providence, R. I.
Richmond, Va.
Rochester, N. Y.
St. Louis, Mo.
Salt Lake City, Utah
San Francisco, Cal.
Schenectady, N. Y.
Seattle, Wash.
Spokane, Wash.
Springfield, Mass.
Syracuse, N. Y.
Toledo, Ohio
Washington, D. C.
Youngstown, Ohio

*Southwest General Electric Company. †General Electric Company of Michigan.
For CANADIAN BUSINESS refer to Canadian General Electric Company, Ltd., Toronto, Ont.
GENERAL FOREIGN SALES OFFICES, Schenectady, N. Y.; 30 Church St., New York City; 83 Cannon St., London, E. C., England.

6866

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Sedan Anchor Top Coupé

Glass-Enclosed

Tremendous popularity of Anchor Tops has this season overshadowed the success of separate winter-tops, in all automobile history.

Even with the tripled capacity of our larger, splendidly equipped factories, established over 30 years in high class coach-building, we have been taxed to the utmost in filling orders for

OVERLAND	BUICK	OAKLAND
Model 85, B-4 and 6 Model 90 Country Club	*D-34, D-35, D-44 and D-45, as well as the New E-44 and E-45*	*Models 32 and 34, Roadster and Touring Car*

They may be seen at leading Overland, Buick and Oakland dealers' show rooms, as well as on the boulevards of practically all leading cities.

They are all beautifully finished—strong—light—durable. There is no over-hang—no squeak or rattle.

They fit perfectly, as if built on the car. Come ready, complete, and anyone can put one on easily and quickly. Priced—

$100 to $165
and up
According to Car Model
F.O.B. Cincinnati

Shown or supplied by your dealer—or, write to us for full details.

We accept $25 deposit with order. Be sure to tell us your car name and model.

Write for descriptive literature.

THE ANCHOR TOP & BODY CO.
Factories Established Over 30 Years
7428 South Street, Cincinnati, Ohio

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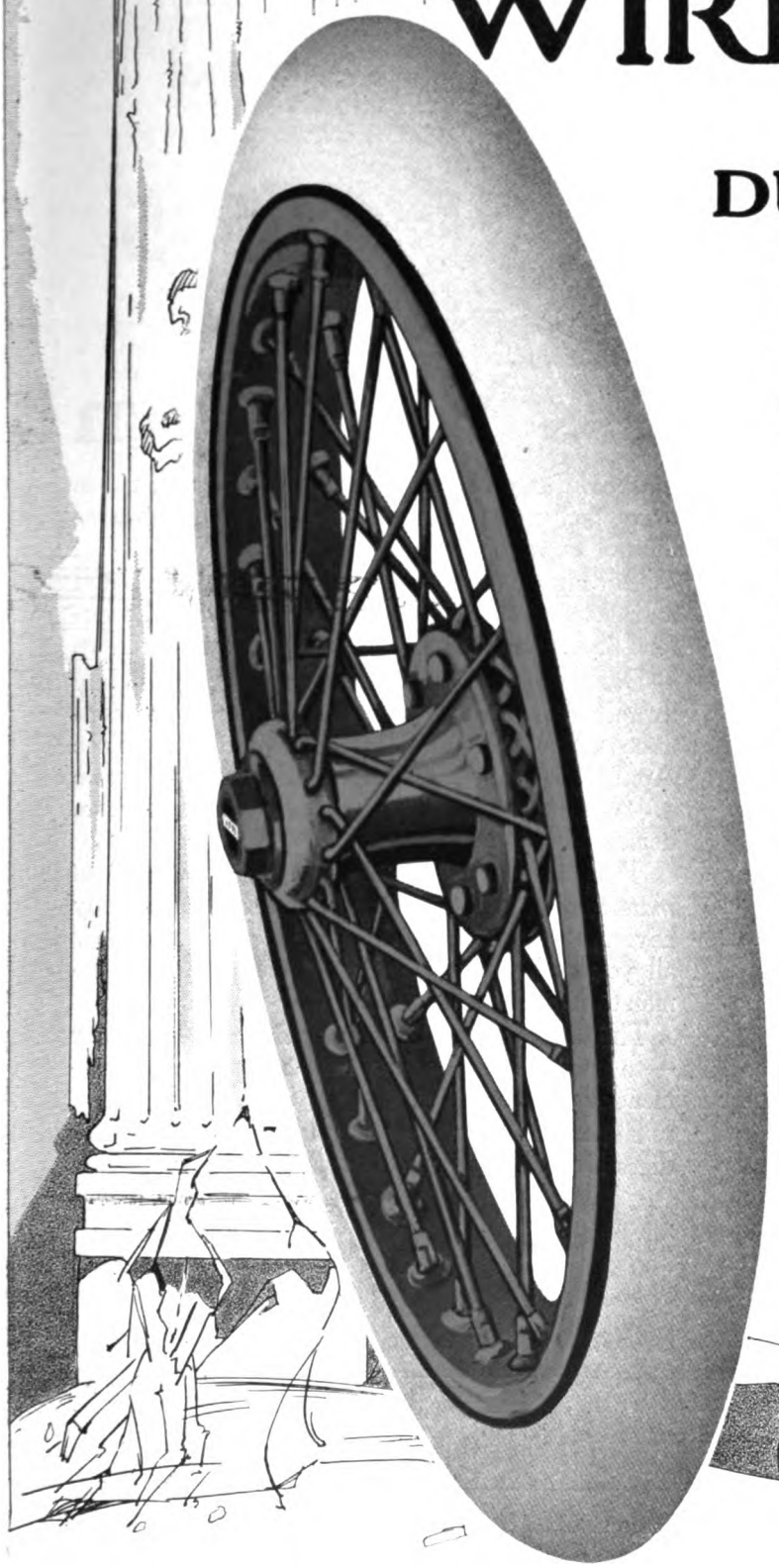
DAYTON

QUICK DETACHABLE

WIRE WHEELS

MADE UNDER LICENSE

For Ford Cars



DURABILITY

Dayton Wire Wheels stand out as a monument to durability and endurance.

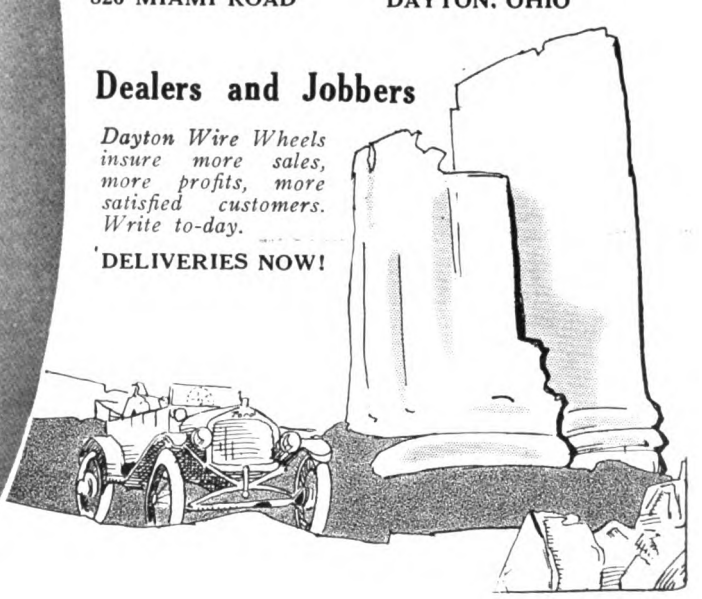
Dayton Wire Wheels are the utmost in wheel equipment. The beauty and attractiveness they lend to a Ford car are undeniable, while such features as quick change, additional tire mileage, safety and strength make them a necessity, rather than a luxury, to discriminating and conservative motorists. Dayton Wire Wheels give the last touch of refinement to the popular Ford Sedan and Coupelet for winter use. When the thermometer stands at zero you will appreciate the quick change feature of Dayton Wire Wheels.

DAYTON WIRE WHEEL CO.
826 MIAMI ROAD DAYTON, OHIO

Dealers and Jobbers

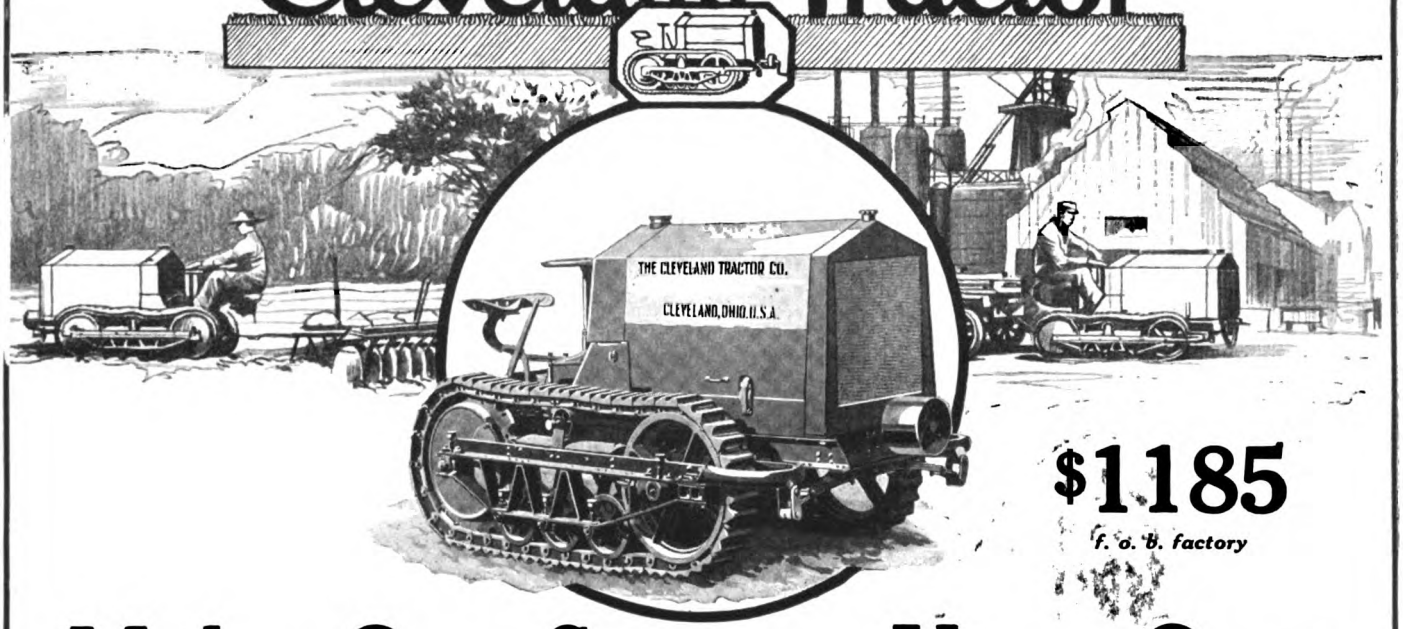
Dayton Wire Wheels insure more sales, more profits, more satisfied customers. Write to-day.

DELIVERIES NOW!



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Cleveland Tractor



$1185
f. o. b. factory

Make Our Success Your Own

The Cleveland Tractor is meeting with a success second only to the most famous successes in the automobile industry.

It is distinctly different. It is an advance over the ordinary tractor as big as the modern automobile is over the sputtering, wheezing thing of fifteen years ago.

It is the one lightweight, economical crawler-type tractor. Because it *travels on its own track* it can go almost anywhere—through and over ditches, out of deep excavations, through wet clay, loose sand and gumbo.

It is easier to operate than an automobile. *It steers by the power of its engine.* Just a light pressure on the wheel and the motor does the rest. You can actually turn it in a 12-foot circle.

And here's a big, important point that will appeal strongly to you.

The Cleveland Tractor is designed, built and backed by Rollin H. White, probably the best known motor truck engineer in the country.

You can make our success your own. Other automobile dealers who have taken on the Cleveland are most enthusiastic over present sales and future prospects. The Cleveland is not a luxury. It is an absolute necessity—a money-making investment for those who buy it. It is needed on every farm, in every factory, and in hundreds of widely varied lines of trade.

Our big advertising campaign has awakened farm and factory to the pressing need for Cleveland Tractors. Sales are being made with practically no effort.

Dealers are wiring, phoning and writing us daily for rush shipments, far in excess of their original contracts. We have doubled our entire plant since April 1. Now the demand is forcing us to redouble it. With our added facilities we will need more dealers to help us handle sales.

You can add the Cleveland to your line without materially increasing your overhead. You already have the show room and the service station. Now all you need is the Cleveland Tractor and a salesman to handle the business.

The Cleveland contract means money—big money—to good dealers—men who are awake to the tremendous opportunities.

Better wire or write us today. *Act now.* Address Dept. BT or use the coupon.

12 H. P. at bar.
20 H. P. at pulley.
600 sq. in. traction surface.
2750 lbs. weight.
52 in. high—50 in. wide.
4-cylinder, high speed heavy duty motor.
Drawbar pull of 1500 lbs.

CLEVELAND TRACTOR COMPANY, Cleveland, Ohio

CLEVELAND TRACTOR COMPANY, Dept. BT, Cleveland, Ohio
Please send me full information about your dealer proposition.

*Name*_____ *City*_____

*County*_____ *State*_____

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Firestone Cord Tires Give Highest Average of Service

USERS of Cord Tires of various makes have entered into a friendly rivalry through their desire to compare results one with the other. This competition of users has brought out the fact that Firestone Super Cord Tires have given the highest average of service.

The body of the Firestone Super Cord Tire is built of walls of stout cord, each cord imbedded in pure gum, no two cords ever touching to cause friction. The cushion (which is under the tread to absorb shocks and protect the inner body) is a thick layer of pure gum; the tread is tough and thick. The beads which hold the tire in the rim are specially reinforced. The sidewall is also reinforced giving extra strength against rim-cut and raising the bending point of the tire safely high. More mileage at less cost. Users of Firestone Cord Tires are getting the highest average mileage enjoyed by car owners.



Firestone FABRIC TIRES

Give Features Based on Cord Tire Success

THE service records of Cord Tires have suggested new features in fabric tires to add to the mileage. Every dealer is prepared to show you an actual cross section of the fabric tire and point out to you:

THICK, TOUGH TREAD: Longer surface wear.

MORE RUBBER BETWEEN LAYERS: Added protection against internal friction.

THICK CUSHION STOCK: More resiliency and protection against stone bruise.

REINFORCEMENT IN BEAD: Great strength against rim cut. Raises the "bending point."

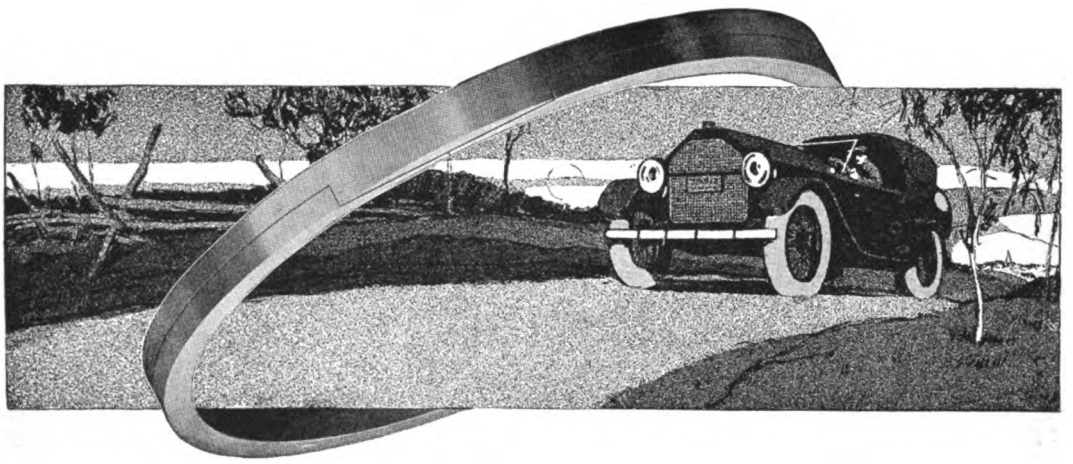
With this cross section in your hand you can see the added miles in Firestone Fabric Tires.

That motorists find extra values in Firestone Tires is proved by the fact that our sales increased 72 per cent this year up to September 1st. Our total business this year will exceed $60,000,000.

FIRESTONE TIRE AND RUBBER CO.
Akron, Ohio Branches and Dealers Everywhere



Digitized by Google



Power leakage solved at last

New invention insures perfect seal for the cylinder chamber

POWER leakage, the motorist's ancient bugbear, is a condition apt to occur in the best of motors, under the most careful and expert handling.

All because one little detail of motor construction had still to be perfected—the piston ring.

It expanded with heat at a different ratio than its encasing cylinder. It allowed gas to escape through heat-developed eccentricities, and worst of all, it wouldn't "stay put." Frequently the gaps in the rings on a single piston would get into line causing a wholesale leakage and loss of power.

15% to 54% more power—100 gallons less of gasoline

After eight years of study and experiment with this problem, George C. Du Bois has brought forth the Tenion Ring, an absolutely new device that overcomes the defects of ordinary piston rings.

The Tenion Ring consists of two sections each interlocking over the other. The result is a device that is absolutely gapless—one which seals the piston with a perfect tightness within the cylinder and yet provides for contraction and expansion.

This enables the piston to function properly on all strokes.

Thus is stopped the prodigal wastage of gasoline during suction and compression, thereby saving approximately one hundred gallons of gasoline per year.

Thus is kept out of the crank case smoke, soot and gasoline, thereby eliminating an engine's carbon ills. And thus is checked a big escapage of explosive force, thereby giving a car 15% to 54% more power.

The individuality of the Tenion

The Tenion Ring is made of individual castings of the finest gray iron of special formula. It permanently retains its shape, wears tight, stays tight and has two to three times the life of the ordinary piston ring. Tenion Rings give the motor a quicker start, a snappier pick-up, and put vim and pulling power into your engine. In fact the Tenion is "a little machine in itself" as a prominent engineer has said, "which makes the piston gas-tight and gives the engine maximum power."

What Tenion Rings Do

1. *They increase power 15% to 54%.*
2. *They materially reduce carbon ills.*
3. *They insure maximum mileage on oil.*
4. *They make possible the engine at 100% efficiency.*
5. *Tenions eliminate the necessity of reboring and replacing.*
6. *They decrease gasoline consumption up to 40%.*

Tenion Rings Bring Business

"By putting Tenion Rings in the cylinder of every motor that is taken down in my shop, my customers' cars always work *so much better* than they ever did before," states L. J. Masterson, proprietor of the Port Henry Garage, Port Henry, N. Y. "The customers are happy, and send their friends when repairs are needed. They think I am a wizard. A big share of my business is due to Tenion Rings."

Andrew Yencks, a car owner of Albany, N. Y., writes: "Tenion Rings looked good to me so I had them placed in each cylinder of my Franklin car. The improvement in power is wonderful; now I carry a full load of seven passengers up hills on high — hills that heretofore I always had to make on second speed The amount of oil used since I installed Tenion Rings has been very much less than before. My car never smokes, and does not collect carbon in the cylinder."

An unusual opportunity for dealers

The Tenion Ring offers a wonderful new opportunity to the accessory dealer. The sale of this splendid device which is so superior to the ordinary piston ring is phenomenal. Sold exclusively through the jobbing trade. If your jobber has not the exact size wanted write or wire us at once.

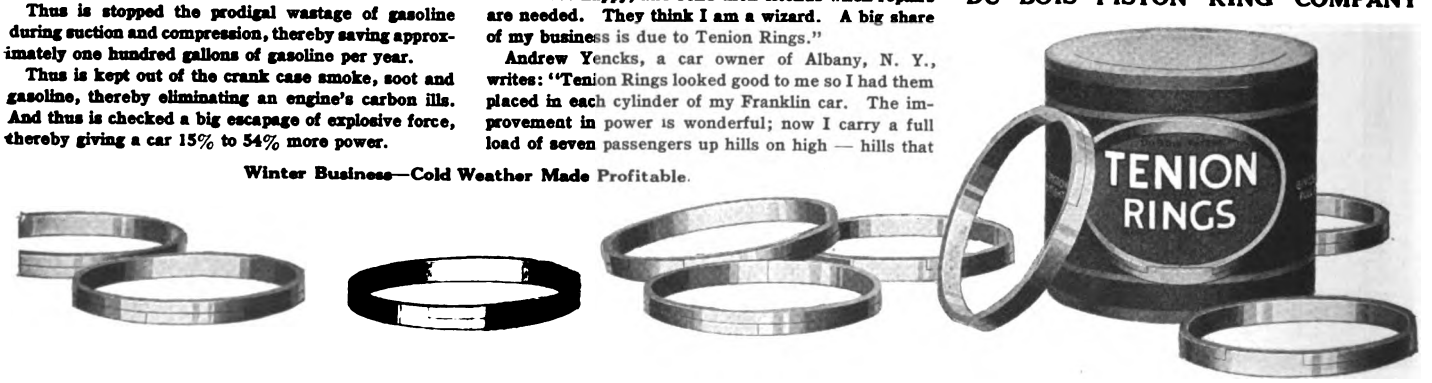
Price List

	Each
2¾" to 3⅜" dia. x 1/16" to ¼" width	$1.60
3½ " 4 " " ¼ " 1/16 "	1.60
4⅛ " 4½ " " ¼ " 3/16 "	1.60
4⅝ " 4⅞ " " ¼ " 3/16 "	1.75
5 " 5⅛ " " ¼ " 3/16 "	2.00
5⅜ " 5¾ " " ¼ " 3/16 "	2.25
5⅞ " 6 " " ¼ " 3/16 "	2.50

Sales Department

EDWARD A. CASSIDY CO., Inc.
Madison Ave., at 40th St., New York
DU BOIS PISTON RING COMPANY

Winter Business—Cold Weather Made Profitable.



TENION RINGS

MAKE PISTON GAS-TIGHT—GIVE ENGINE FULL POWER

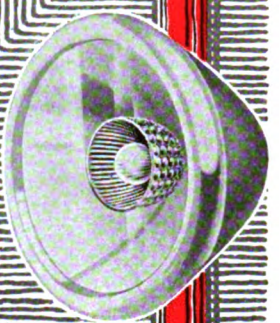
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Stewart PRODUCTS



Stewart Speedometer $25



Stewart Lens $2 per pair

No Dull-Winter-Season for Stewart Products

Stewart Products have a sale the whole year 'round—365 days in the year. A dull-Winter-Business period is unknown to Stewart Products.

A Stewart Speedometer is just as necessary in Winter as in Summer.

A Stewart Warning Signal is absolutely indispensable for Winter driving, when cars are enclosed.

The Stewart Vacuum System facilitates starting in cold weather—provides the only satisfactory gasoline feed.

A Stewart V-Ray Searchlight is certainly needed in the Winter time.

Every engine needs a set of Stewart V-Ray Spark Plugs. A big, fat spark—intense and unfailing—is assured. Makes starting easier and insures smoother running of the motor.

Motoring is rapidly losing its seasonable aspect. No longer is the automobile for Summer use only. This Winter at least 75% of the automobiles will be in use most of the time. Comparatively few cars will be put up for the Winter.

Can't you see the possibilities for a big Winter business on Stewart Products?

Stewart-Warner Speedometer Corporation
CHICAGO, U. S. A.



Stewart V-Ray Spark Plug $1



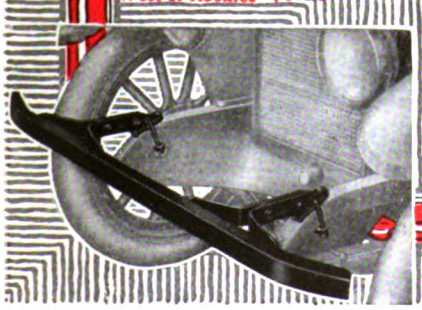
Stewart Vacuum System $10



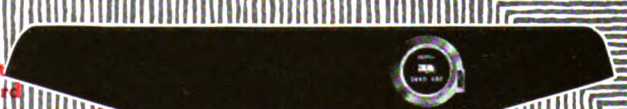
$5 Stewart V-Ray Searchlight West of Rockies $5.50



Stewart Motor Driven $6 Warning Signal Hand Operated Type $3.50



$9 Stewart Autoguard West of Rockies $9.75 Special Ford Model $7.50 West of Rockies $8.25



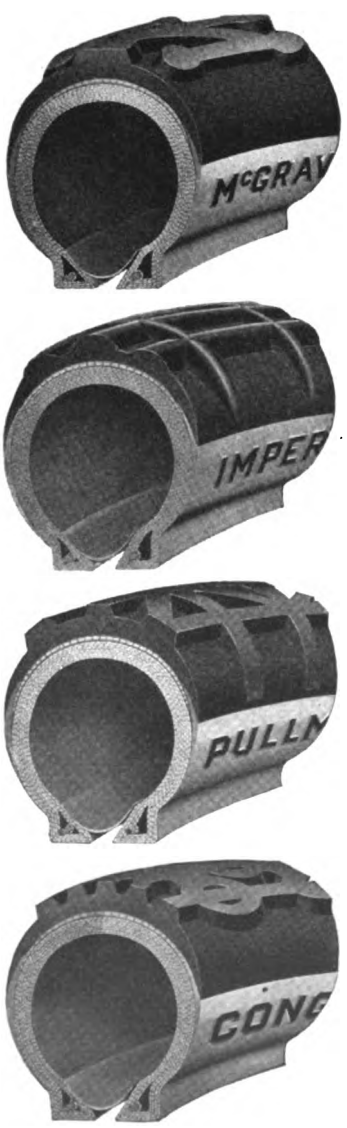
Stewart Instrument Board for Ford Cars $11.25

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McGRAW PRODUCTS

Pneumatic Tires ' Motor Cycle Tires ' Inner Tubes





Facilities

THE McGraw Plant has the size and modern equipment for most economical production. Our warehouses are located to afford immediate service to distributors. Years of experience have developed a broadly efficient field service.

McGraw Products—McGraw, Imperial, Pullman and Congress Tires and Tubes are backed by the resources of a nation-wide organization—and sold by several hundred reputable distributors throughout the country.

If you have not done so heretofore, you should investigate the McGraw proposition, which is offered to *wholesale distributors exclusively.*

The McGraw Tire & Rubber Co.

East Palestine, Ohio

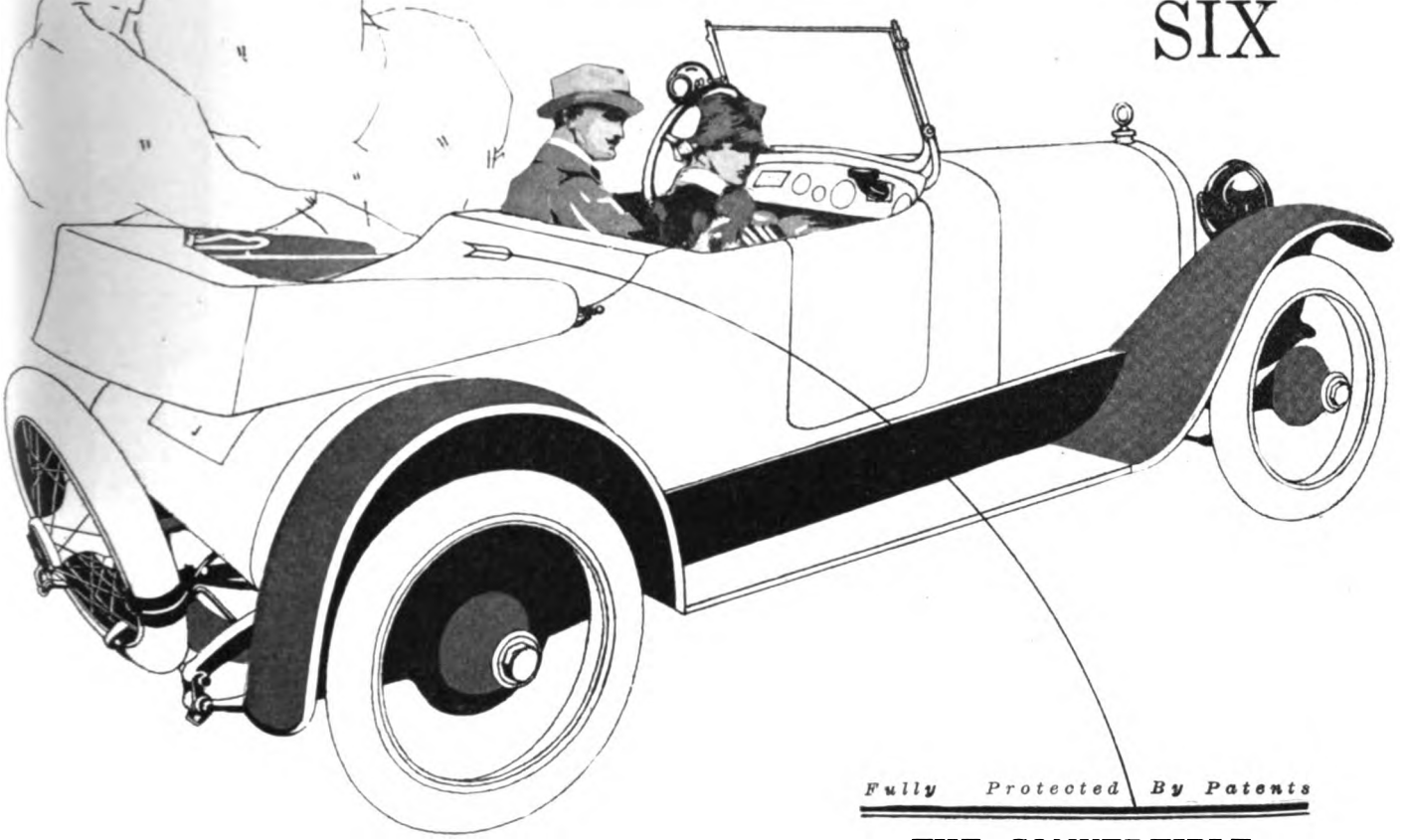
Distributing Warehouses ' ' New York ' ' Atlanta ' ' St. Louis ' ' San Francisco

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ANDERSON

SIX



Fully Protected By Patents

THE CONVERTIBLE SPORT CAR

Changeable in a twinkling from real roadster to real five passenger touring car.

THE exceptional utility and smart distinctiveness of the ANDERSON *Convertible* SPORT CAR mark a new epoch in fine coach work designing.

Because of its remarkable adaptability, it makes an ideal car for every purpose and for every occasion.

It will accommodate two—or five—just as you wish. It will be Roadster *or* Touring Car, just as the occasion requires.

Yet as Roadster or Touring Car no small detail is lacking. There is no make shift in either.

As a Roadster **it is smart looking—and powerful looking. It looks like a custom-built car—and it is. All Anderson bodies are custom-built in our own big body plant where we have specialized in designing and building fine coach work for 28 years.**

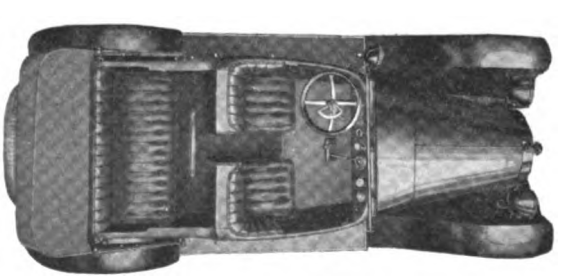
When the car is used as a Roadster, the covered rear deck (dust proof and lockable) provides liberal storage space for luggage, robes, etc.

As a *Touring Car* **it is roomy and exceedingly comfortable. It accommodates five people without the slightest crowding or cramping. The seats are luxuriously wide and soft, tailored in real leather, French pleated.**

It will do all the things any stock "SIX" will do. It will travel from 3 to 60 miles an hour on high. It will average 17 miles to a gallon of gasoline. It is easy on tires, a great hill climber and an unusually easy car to handle in traffic or on the straight-a-way.

Literature available and will be mailed on request.

Wheelbase 120 inches. Weight 2750 lbs. Equipment includes Spotlight, Motometer, Engine driven tirepump, Klaxon Electric Warning Signal, Tonneau exhaust heater, Speedometer, Quick inside attachable storm curtains.



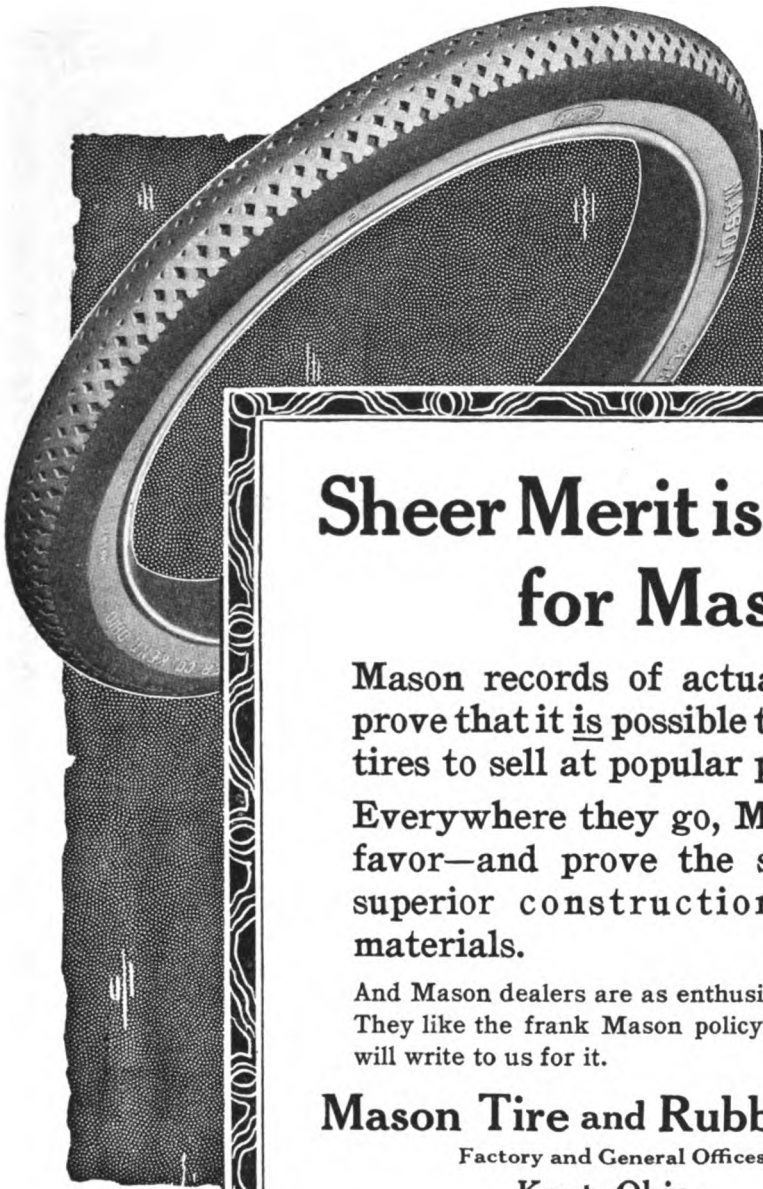
Prices Include New War Tax

Convertible Sport Car	$1435	Touring cars, 5 pas. straight or divided front seats	$1435
Springfield Type, Convertible Sedan	2165	Victoria Top, extra	150
Wire Wheels, 5 to a set, extra	110		

ANDERSON MOTOR CO., Rock Hill, South Carolina

Foreign Dept., 8-10 Bridge St., New York City, U. S. A.

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Sheer Merit is Winning for Mason

Mason records of actual performance prove that it is possible to make quality tires to sell at popular prices.

Everywhere they go, Mason tires find favor—and prove the sheer merit of superior construction of the finest materials.

And Mason dealers are as enthusiastic as Mason users. They like the frank Mason policy—so will you, if you will write to us for it.

Mason Tire and Rubber Co.

Factory and General Offices

Kent, Ohio

Akron Suburb

Cleveland 1806 Euclid Ave.
Chicago 2120 Michigan Ave.
New York 28 W. 63d St.
Kansas City 1732 Grand Ave.
Buffalo 834 Main St.
Atlanta 21 Houston St.
Akron 34 W. Market St.



MASON MEANS MORE MILEAGE

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H-M

Adjustable Metal Radiator Covers for All Model Ford Cars

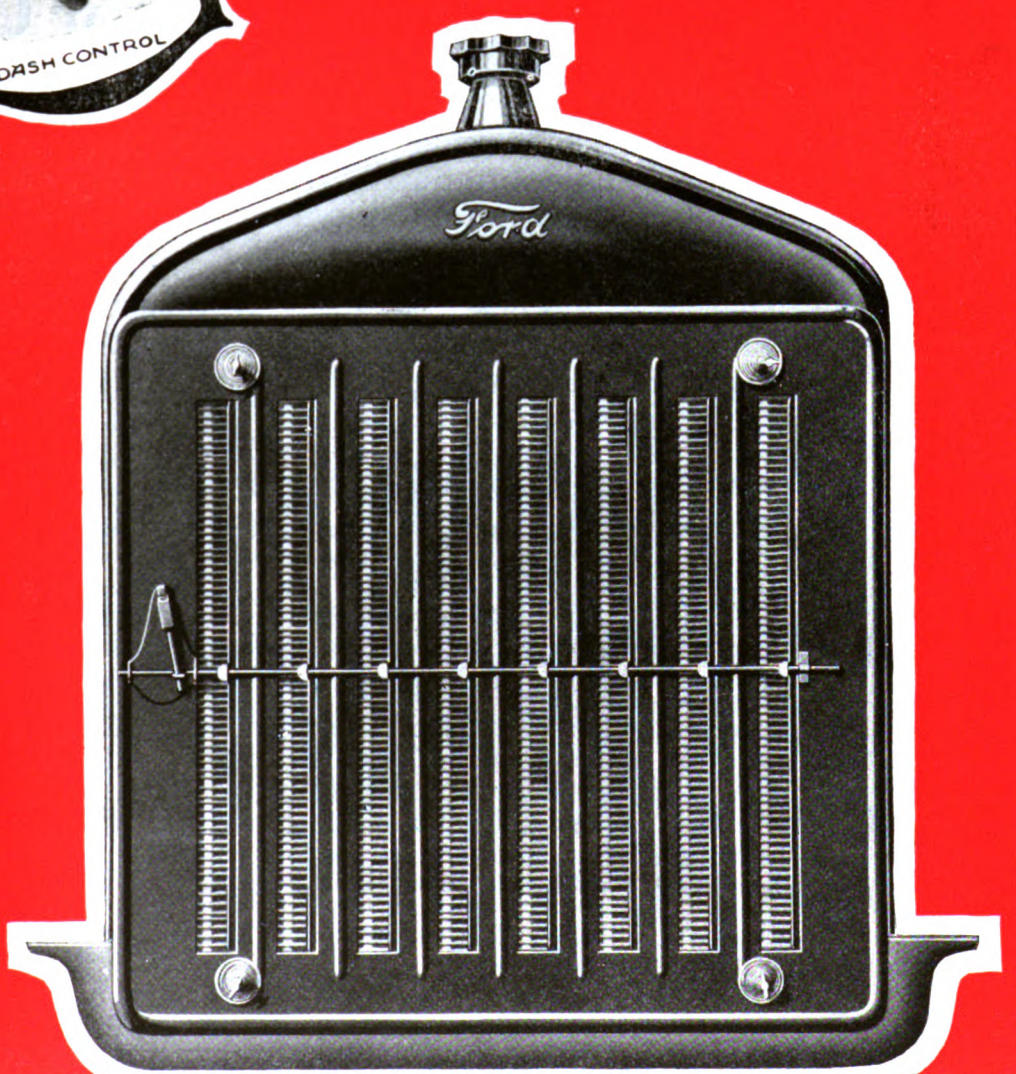
A thoroughly practical adjustable METAL Radiator Cover. Made of sheet metal, lasts for years and pays for itself in one winter's saving in fuel. Operates from foot-board or dash of car—no need to leave seat. Will keep radiator warm for hours in coldest weather. Attached by anyone in few minutes.

Price $5.00

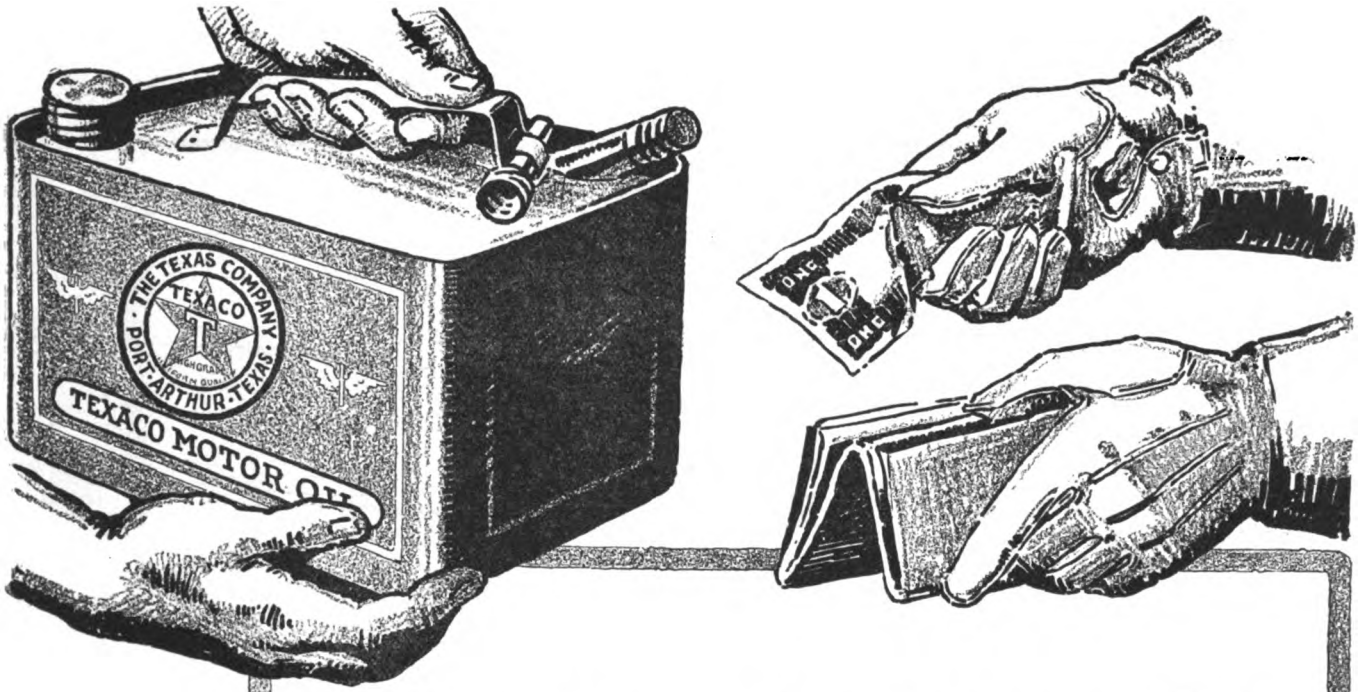


DEALERS—Write at once for our proposition showing how to turn your winter months into profits. H. M. Adjustable **Metal** Radiator Covers are selling by the thousand. Get your share of these quick, sure profits by acting **at once.** Write today—it means money in your pocket.

H-M MANUFACTURING COMPANY
Dept. 23
122 So. Michigan Avenue, Chicago



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When You Buy Motor Oil

The fact that your car would not run fifty yards without a lubricant of some kind in the crank case is ample evidence of the important part that lubrication plays in the operation of an automobile motor.

It is evident that there must be differences in the qualities of motor oils. Then, for the sake of economy and efficiency, use care when you buy motor oil. Buy only oil of proved and uniform quality, refined by a company in which you can place entire confidence.

TEXACO MOTOR OIL

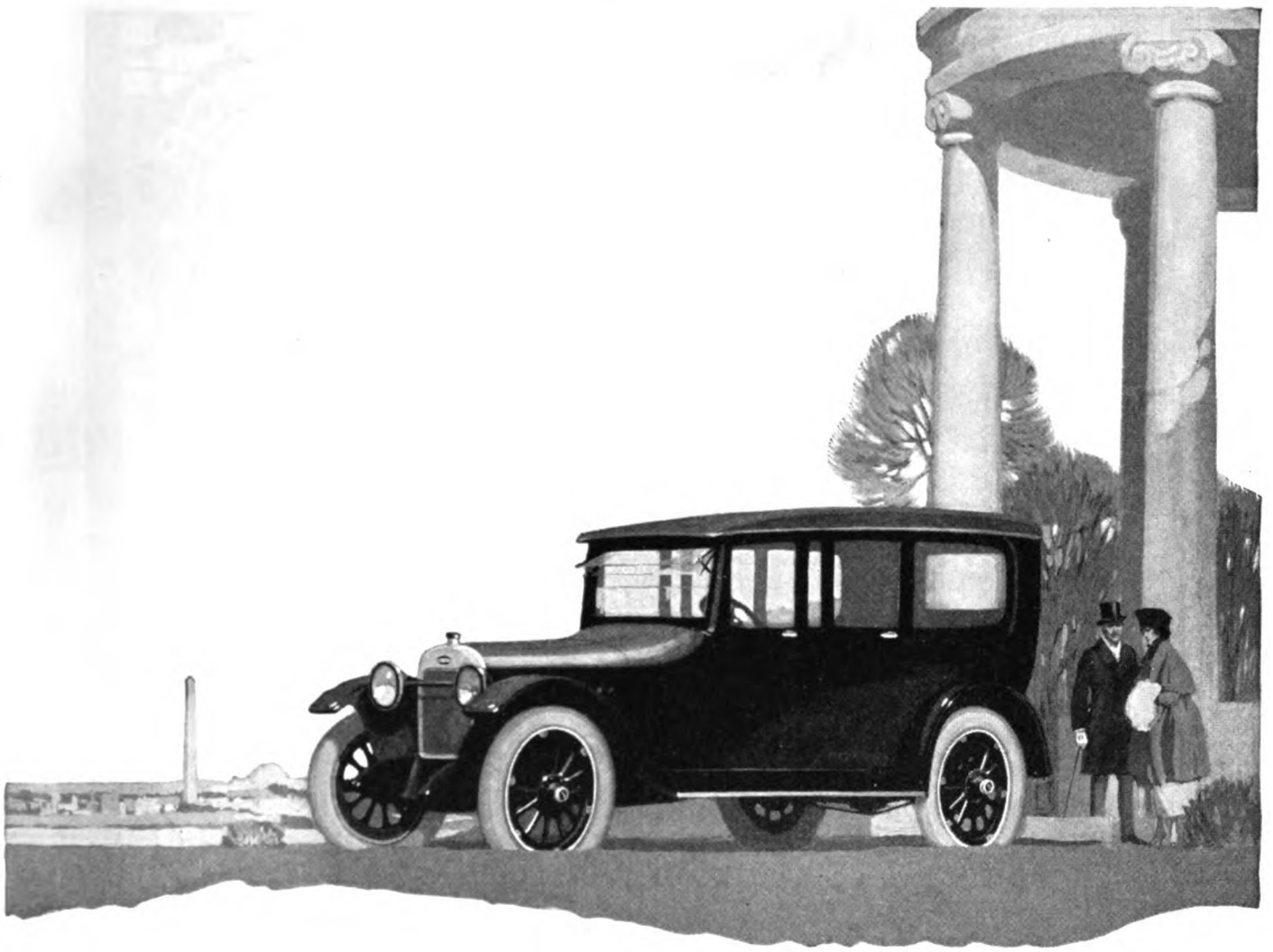
is such an oil. It lubricates perfectly, keeping friction at a minimum. It gives an absolute seal between piston and cylinder walls, thus preventing leakage of gasoline into the crank case and the resulting deterioration of the lubricant.

Due to certain basic qualities it is impossible for Texaco Motor Oil to deposit a hard carbon crust in the combustion chamber and cylinders. Any carbon which does result from its use (and no oil is free from carbon) will be of a soft, sooty nature; will not score or cut the cylinders; and may be easily wiped off with a piece of cloth.

When you buy motor oil buy Texaco. The best way, the safest way, is in one or five gallon cans. Recognize Texaco Motor Oil by its clear, clean color.

THE TEXAS COMPANY
New York Chicago Houston
DISTRIBUTING OFFICES IN MOST CITIES

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CONTINUING A SUCCESS

THERE are sound reasons why the dealer presenting the new Oakland Sensible Six can look forward to conducting a thriving business during the coming year.

The latest Oakland is a continuation of the remarkably successful Oakland Sensible Six of the past three seasons.

This popular car has been annually refined, improved and strengthened so that now it has more power, picks up faster, is handled with greater ease and is more frugal in use of fuel.

Contributing to the higher efficiency of the overhead-valve, high-speed six-cylinder engine are improved manifolds which secure the utmost power value from today's gasoline; a new force feed oiling system; a larger pump; a new-type biplane fan.

Comfort is increased by the contriving of 106 inches of body room on the 112-inch wheelbase; long, specially graded springs; extra large tires.

Appearance is enhanced by a new, sloping windshield; oil gauge on the dash; deeper radiator; higher body wall; tire carrier at rear.

These are simply representative of the total refinements of the new Oakland Sensible Six which make it a good car to sell because it is a good car to buy.

The engine delivers at 2600 r. p. m. one full working horsepower to every 48 pounds of car weight—the highest power known in a passenger car of this size, with one exception.

Touring Car	*$990*
Roadster	*990*
Coupe	*1490*
Sedan	*1190*
Roadster Coupe	*1150*

F. O. B. Pontiac, Mich.

OAKLAND MOTOR CAR CO.
PONTIAC, MICHIGAN

OAKLAND SENSIBLE SIX

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FAIR LIST PRICES FAIR TREATMENT

GOODRICH TRADE MARK TIRES

Start Your Customers Right With

GOODRICH Tubes

A TIRE is no better *than the tube* in it. For after all a *shoe* is but an armor to *protect* the vital part within it—the *tube* that holds the LIFE BREATH of the tire.

It is the duty of dealers to fix this fact in the minds of their customers together with the intense importance of getting the *best tube* to be had.

To help you determine the best tube, we ask you to take in your fingers a GOODRICH BROWN TUBE, and compare it with any other tube.

The very feel of it—its texture, its elasticity, as flexible as a big rubber band for all its tough thickness—tells you the striking difference.

Goodrich Brown Tubes cost more than other tubes, but a dealer should impress upon a customer that *cheapness* in a tube at the *beginning* means *costliness* in the *end*.



Goodrich also has an excellent standard tube at a lower price—THE GRAY TUBE.

Assure your trade that Goodrich tubes—another triumph of Goodrich's forty-eight years experience in rubber compounding—are the best "tubes for him in any case."

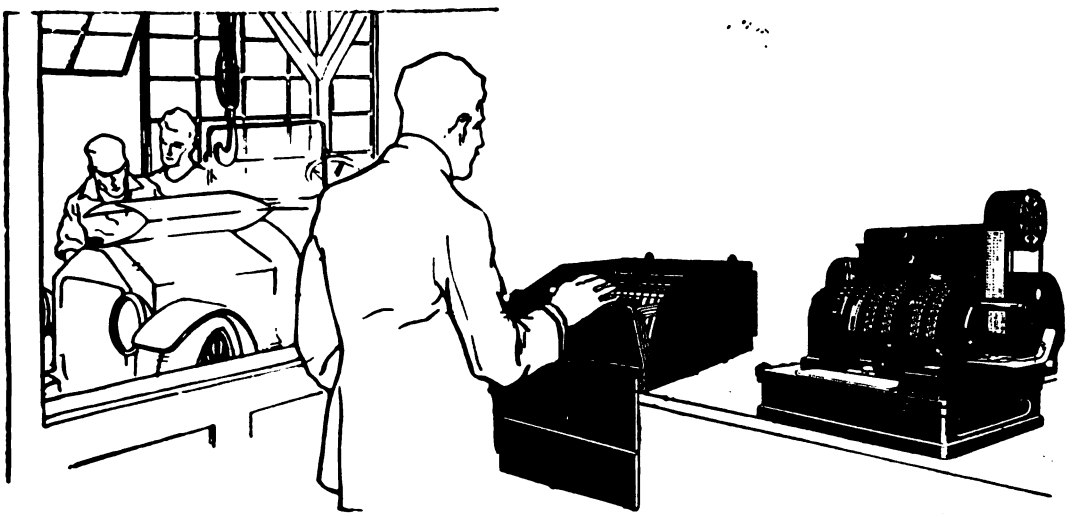
The B. F. Goodrich Company

AKRON, OHIO

Maker of the Famous Silvertown Cord and Black Safety Tread Tires

BEST IN THE LONG RUN

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Up-to-date System for Garages

Electrically Operated National Cash Register

Greatest labor-saving machine for garages and service stations.

It does 15 things in three seconds.

It gives a separate record of money received for storage, tires, oil, gas, repairs, etc.

Advertises your goods direct to your customers.

It does quickly what helpers can't do.

The New N. C. R. Credit File

Cuts out all bookkeeping of customers' accounts.

No customers' ledger, blotter or daybook.

Every customer's account balanced to the minute.

Complete record with one writing. Saves time and work.

Customers like it; it saves their time.

Prosperity is increasing. Hence don't delay.

Order now and get the profits which our system will make for you.

It more than pays for itself out of the money it saves. Sold on small monthly payments.

Old cash registers repaired, bought, sold, rebuilt and taken in exchange for new registers.

To Dept. 34,
National Cash Register Co., Dayton, Ohio

Please send me full particulars of your latest model cash register and the new N. C. R. credit file.

Name_____

Business_____

Address_____

Get the benefit of these prosperous times.

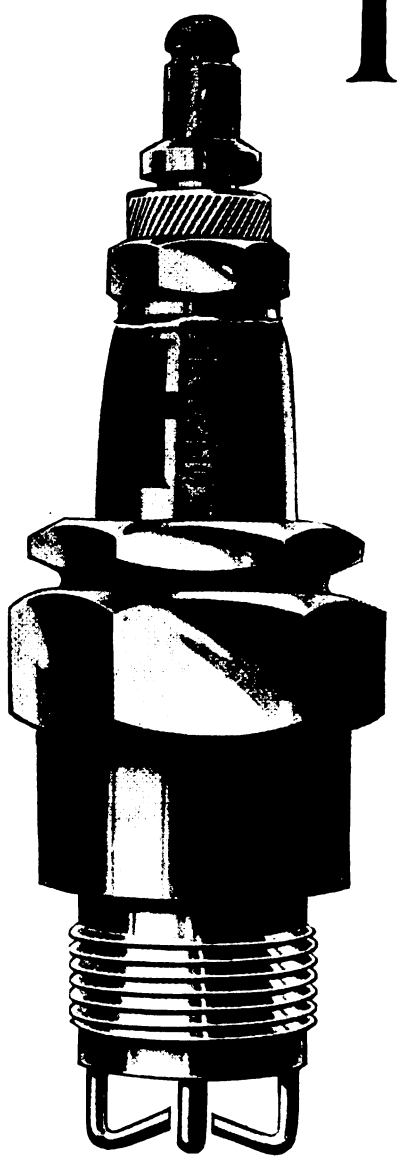
Cut out this coupon and mail it today.

When writing advertisers please mention Motor World—It identifies you

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HERCULES Spark Plugs

HEAVY DUTY TYPE



The HERCULES Giant

spark plug is equipped with stone insulator and designed primarily for use in motors of the heavy duty type, where every extreme is encountered.

These will be furnished in any and all sizes for tractors and commercial vehicles as well as stationary and marine motors. All the foregoing types are designed especially for this service.

Write your jobber.

STRICTLY A QUALITY PRODUCT

MADE IN U.S.A.

ECLIPSE MANUFACTURING CO.
INDIANAPOLIS

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MARATHON
SPEED
ENDURANCE

Bettering the Dealer's Hand

In many ways, it's a game—the selling of tires, isn't it? And the better your hand, the better your chances to win—to win day-by-day customers and permanent success.

In handling Marathon hand-made tires you really have something to sell; something that you can talk about; something that will make good on your promise when it's given a hard test on the customer's car.

We make these tires as though we had to sell each one personally to each customer; we're personally back of every tire that passes through your hands; and the whole reason for it is that we believe so thoroughly in the tire ourselves.

That's pretty strong guarantee talk; we'll admit it.

But it's what we mean.

Let us tell you in detail about the guarantee plan back of Marathon hand-made tires. It will probably be news to you as a dealer—accustomed to selling on the usual tire guarantee that most manufacturers offer you.

And it will mean much to you in the way of permanent satisfied customers.

The Marathon Tire & Rubber Co.

Cuyahoga Falls, Ohio

Canadian Factory, St. Catharines, Ontario

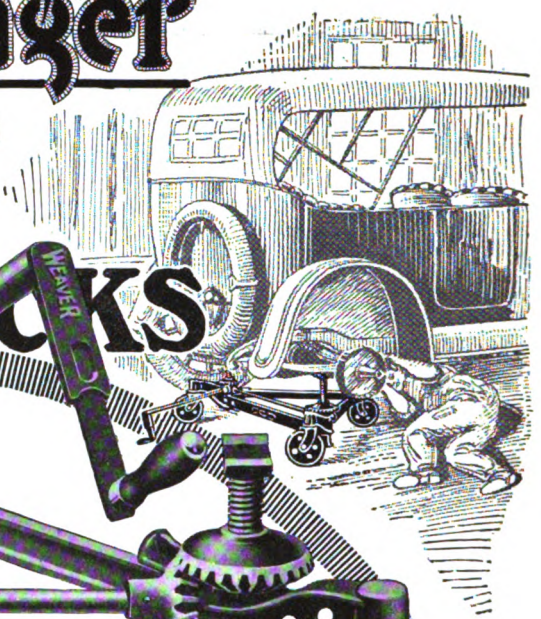
WAREHOUSES

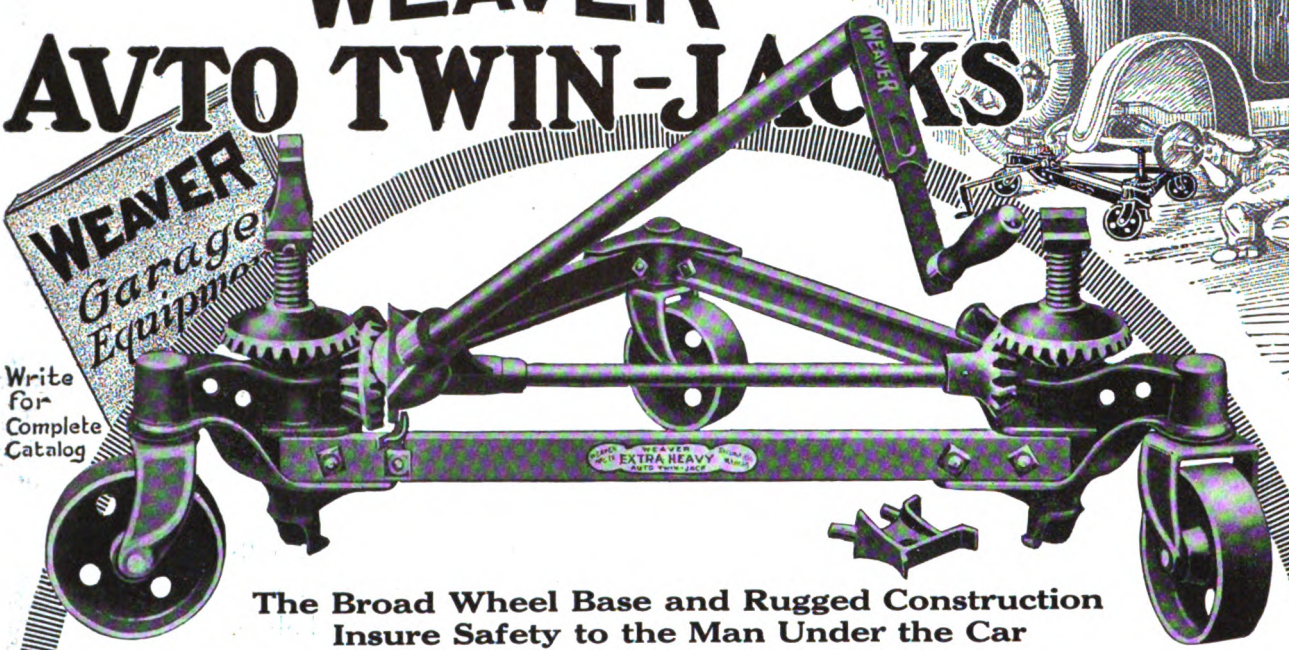
700 Beacon St., Boston.
549 W. 52d St., New York.
1450 S. Michigan Ave., Chicago.
3434 Locust St., St. Louis.
200 South Highland Ave., Pittsburgh.
10,213 Euclid Ave., Cleveland.
1809 Grand Ave., Kansas City.
55 Second St., San Francisco.

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There's No Danger

in "overhauling" with WEAVER AUTO TWIN-JACKS





Write for Complete Catalog

The Broad Wheel Base and Rugged Construction Insure Safety to the Man Under the Car

THE feeling of absolute security inspired by the broad, massive construction of the Weaver Auto Twin-Jack enables the machanic to work to the best possible advantage. There is no fear of the dismantled car falling upon him, and he is enabled to move the car at will to facilitate operations.

The dependable crank hoist has no ratchets to be accidentally "tripped" or to jar loose while transporting the load. Every part is properly machined and fitted to insure the maximum of strength and durability.

Always in Service

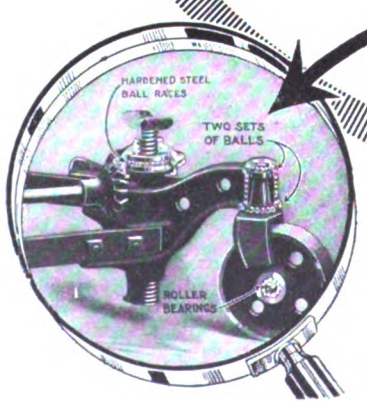
Every phase of the handling of automobiles demands Weaver Auto Twin-Jacks:—Unloading cars from freight cars—placing them in position on the sample floor—getting out the "buried" car in the garage—placing in closer formation to economize floor space in the storage room—handling dismantled cars in the repair shop—facllitating operations in the wash room and paint shop.

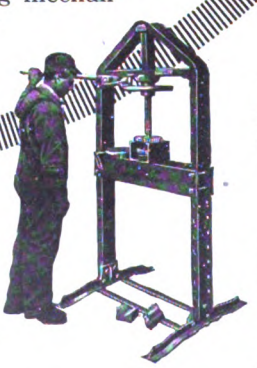
A few turns of the crank handle raises one entire end of the car and supports it firmly and securely upon the large ball and roller bearing casters. With one of these Jacks under each axle, the car can be turned completely around within its own length, pushed sideways, or manipulated upon the floor in any other desired manner. One man can handle the heaviest pleasure cars with ease.

WEAVER Auto Twin-Jacks are scientifically constructed and designed by SPECIALISTS who manufacture nothing but Garage Equipment. *** Built in two sizes, to meet all requirements. *** Will fit either axle of the car.

Ball and Roller Bearings Throughout

High grade ball and roller bearings relieve the friction in the casters and lifting mechanism. Excessively heavy loads can be handled with extreme ease.







Weaver Auto Ambulance

Will handle your "tow in" jobs safely, quickly and economically. Will fit either axle.

Weaver 20-Ton Press

Discard the sledge hammer and do your work in a mechanical manner. This press will soon save its cost, besides increasing your patronage.

Weaver Mfg. Co.

2165-79 South Ninth St.

Springfield, Illinois

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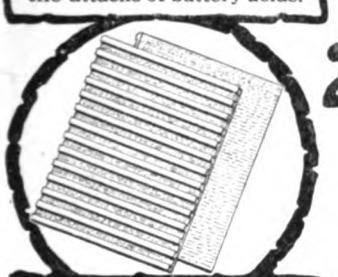
3 Exclusive VESTA Features that Create a Bigger Battery Business





1

The Indestructible Isolator positively locks the plates apart and prevents short-circuits Entirely immune to the attacks of battery acids.



2

The Impregnated Wooden Mats absorb battery acids as freely as ordinary mats and form a perfect path for the current, yet prevent "treeing" and its disastrous consequences.



3

Titanium, a rare mineral, hardens the lead plates, giving them longer life. It precipitates all minerals and impurities in solution and adds vastly to the efficiency of the battery.

When a buyer asks "WHY?"

The Vesta dealer has three good reasons to give to support his recommendation of the Vesta Battery. These three reasons appear on the left. There is nothing fanciful about them—they are sound, practical, obvious advantages. It is plain that they must mean longer life, greater efficiency, less liability to trouble.

And the reason that Vesta Batteries mean a bigger battery business for the dealer is simply because the Vesta dealer has these three great selling arguments which appeal to the judgment of every thoughtful motorist.

Motorists are learning that batteries are different and when the time comes for replacement it is well to look about, instead of blindly ordering "the kind that came with the car."

Write for our Service Station Plan TODAY.

VESTA ACCUMULATOR CO.
2103 Indiana Avenue
CHICAGO

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Most Successes Are Brought About By Having a Plan and Then Working The Plan

Have you definitely outlined your work for the Winter Months? There are just six weeks from now until Christmas—Put down these dates, then write opposite just what your plan of merchandising will be for each week—This is a plan.

After you have reduced it to writing then follow it religiously—See that every man in your organization knows what your plan for the week is—

In a department store or any other business house you will find that every person in the organization is required to be fully posted on the plans for the day or week—A bulletin board is used to keep all informed. Isn't the success of your business of just as much importance as that of the Dry Goods man in your town? You do a larger volume of business—You have greater possibilities in your business—Whether you live up to your opportunity or not is up to you.

The Automobile Accessory Jobbers of America Are Ready to Help You in Every Way Possible. Ask Your Jobber's Salesman for Suggestions.

FREE TO DEALERS

The Assisting the Trade Committee of the National Association of Automobile Accessory Jobbers has caused a book to be printed in which is told one man's way of conducting every department of a Garage business. It's free for the asking. Of special interest to new dealers and those who have awakened to the need of more systematic methods in the conduct of their business.

ADDRESS:

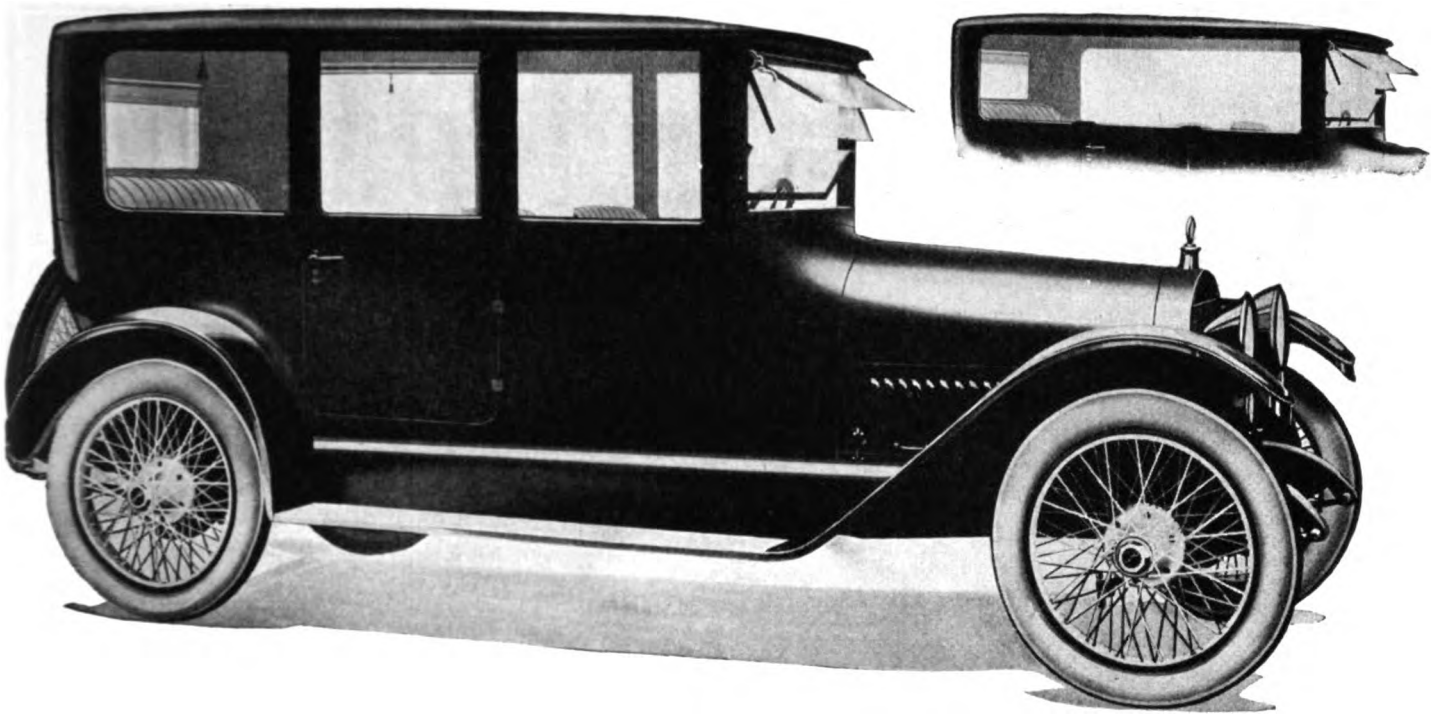


National Association of Automobile Accessory Jobbers

WM. WEBSTER, Commissioner

CITY HALL SQUARE CHICAGO, ILL.

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The New Haynes Sedan

APPROVED by the dictates of Fashion for the 1918 Season, the new Haynes All-Season Sedan is a noteworthy offering.

The ultra-fashionable French pleated upholstery is of a serviceable, attractive gray. The seats are luxuriously cushioned and so shaped as to afford maximum comfort.

Curtained in gray silk, with gray side-walls and ceiling, the harmony of the interior is extremely pleasing.

A convenient switch floods the Sedan with light. The side windows at rear are completely removable, or drop half way, if desired. The other side windows drop entirely into the body. Doors are staggered. A Perfection heater is used. Four rich body colors are supplied.

Both Haynes "Light Sixes" and Haynes "Light Twelves" are available in these Sedans, as well as in equally smart Town Cars and Coupes. If you are a dealer, a most interesting proposition awaits you at this time. Write for details.

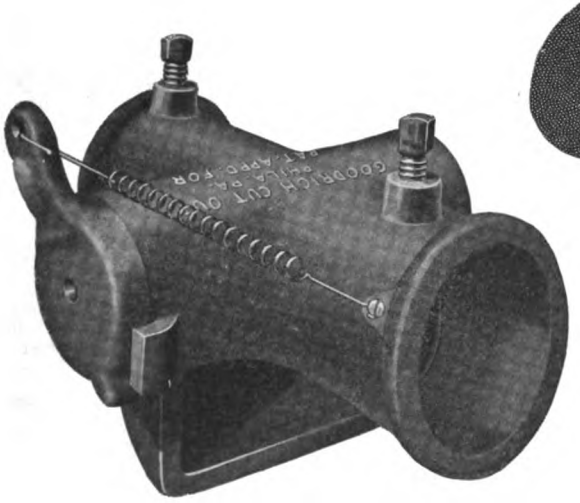
THE HAYNES AUTOMOBILE COMPANY *70 S. Main St., Kokomo, Ind., U. S. A.*

25th Successful Year of

HAYNES

"America's First Car"

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Goodrich

Motor Testing Valve

"Your Motor's Voice"

Indispensable For Any Car

EVERY PULSATION OF YOUR MOTOR—THE VERY HEART OF THE CAR—IS DISTINCTLY HEARD WHEN THE GOODRICH TESTING VALVE IS OPENED.

No owner should drive his car out of the garage before "opening up" the motor to learn if all cylinders are working properly.

The bell-mouth opening of the GOODRICH MOTOR TESTING VALVE allows for ample expansion of the gases, relieves the motor of all back pressure and greatly intensifies the sound of the explosion.

The valve is so constructed that it completely shuts off all the gas from passing into the muffler when closed.

The exhaust is given complete freedom, thereby reducing to a minimum the carbonizing of the cylinders and spark plugs.

Made in sizes for all cars.

Prices quoted on request—made complete with pedal.

DEALERS—Write or wire today for liberal discounts on Goodrich products. Backed up by national advertising campaign.

GOODRICH-LENHART MFG. CO.
419 WIDENER BUILDING PHILADELPHIA



Protect Your Ford With a

GOODRICH LOCKSWITCH

with Yale Lock

No thief can unlock or unscrew it. The lock is Yale with individual key—a positive safeguard against theft.

$3.50 Complete
$4.50 in Canada

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IT'S THE LARGE RADIATING SURFACE— AND THE THERMOSTAT

A large radiating surface is the secret of success in a car heater. Not a small surface red hot, that burns your feet while the rest of you freezes, but a large surface giving off the proper warmth to make you comfortable all over.

The Thermo-Heater has the largest and most equitably warmed radiating surface. It is a foot and body warmer, not a shoe burner.

And you can *regulate* the heat, so as to maintain just the temperature you want, by means of the Thermostat attachment. You can let in a degree of heat to warm you on the *coldest* days, and then when the weather moderates you can tone the heat down to suit your comfort.

Dealers will do well to consider these points in selecting the heater they are going to handle in 1918.

Many leading cars are equipped with these heaters. If your car has no heater as standard equipment, recommend the Thermo-Heater to your customers. It will add to their pleasure in the car.

The Thermo Heater is easily attached. It sets *on* the floor—not *in* the floor. There are but three holes to bore, and the pipes to connect.

Description—Model "A," 28" long, 4" wide, 1" thick, Cast Iron Black Enameled $12.00
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Latest and Best Automobile Books

By Victor W. Page, M. E.

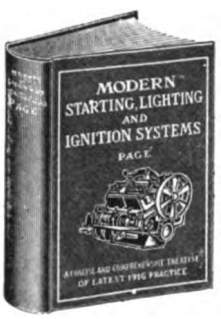
The Model T Ford Car, Its Construction, Operation and Repair

By Victor W. Pagé, M.E.

This is a complete instruction book. All parts of the Ford Model T Car are described and illustrated; the construction is fully described and operating principles made clear to everyone. Every Ford owner needs this practical book. New edition. 75 illustrations, 200 pages. Large folding plate.

Price, $1.00.

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By Victor W. Pagé.

A practical treatise on modern starting and ignition system practice. Includes a complete exposition of storage battery construction, care and repair. Explains all types of starting motors—generators—magnetos and all ignition or lighting system units. Considers the systems of cars already in use as well as those that are to come in 1917. A book every one needs. Nothing has been omitted, no details have been slighted. A book you cannot afford to be without.

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A thoroughly practical book containing complete directions for making repairs to all parts of the motor car mechanism. Written in a thorough but non-technical manner. Will be found of special value to garage-men, chauffeurs and automobile mechanics; it also contains a mass of general information that will be of equal value to the motorist who takes care of his own car.

This book contains special instructions on electric starting, lighting and ignition systems. Tire repairing and rebuilding. Autogenous welding. Brazing and soldering. Heat treatment of steel. Latest timing practice. Eight and twelve-cylinder motors, etc., etc. A guide to greater mechanical efficiency for all repairmen.

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Price, $1.00 net.

The Modern Gasoline Automobile

By Victor W. Pagé.

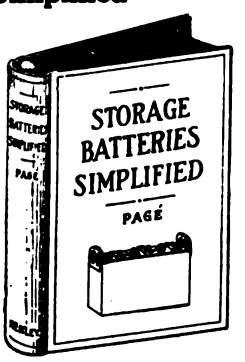
The most complete treatise on the gasoline automobile ever issued. Written in simple language by a recognized authority familiar with every branch of the automobile industry. Free from technical terms. Everything is explained so simply that anyone of ordinary intelligence may gain a comprehensive knowledge of the gasoline automobile. The information is up to date and includes, in addition to an exposition of principles of construction and description of all types of automobiles and their components, valuable money-saving hints on the care and operation of motor cars propelled by internal combustion engines.

The book tells you just what to do, how and when to do it. Nothing has been omitted, no detail has been slighted.

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A comprehensive treatise devoted entirely to secondary batteries and their maintenance, repair and use.

This is the most up-to-date book on this subject. Describes fully the Exide, Edison, Gould, Willard, U. S. L. and other storage battery forms in the types best suited for automobile, stationary and marine work. Nothing of importance has been omitted that the reader should know about the practical operation and care of storage batteries. No details have been slighted. The instructions for charging and care have been made as simple as possible. 250 pages. Very fully illustrated.

Price, $1.50.

The Automobilist's Pocket Companion and Expense Record

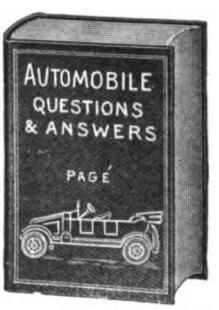
Arranged By Victor W. Pagé, M.S.A.E.

This book is not only valuable as a convenient cost record, but contains much information of value to motorists. Includes a condensed digest of auto laws of all States, a lubrication schedule, hints for care of storage battery and care of tires, location of road troubles in all parts of the car, anti-freezing solutions, horse-power table, driving hints and many useful tables and recipes of interest to all motorists. Not a technical book in any sense of the word, but a collection of practical facts in simple language for the everyday motorist.

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Give the names of all important parts of an automobile and describe their functions. Describe action of latest types of kerosene carburetors. What is the difference between a "double" ignition system and a "dual" ignition system? Name parts of an induction coil. How are valves timed? What is an electric motor starter, and how does it work? What are advantages of worm drive gearing? Name all important types of ball and roller bearings, etc., etc.

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Location of Gasoline Engine Troubles Made Easy

This chart shows clearly all parts of a typical four-cylinder gasoline engine of the four-cycle type. It outlines distinctly all parts liable to give trouble and also details the derangements apt to interfere with smooth engine operation.

It simplifies location of all engine troubles, and while it will prove invaluable to the novice, it can be used to advantage by the more expert. This sectional view of engine is a complete review of all motor troubles. It is prepared by a practical motorist for all who motor. More information for the money than ever before offered. No details omitted. Size 25 x 38 inches. Securely mailed on receipt of

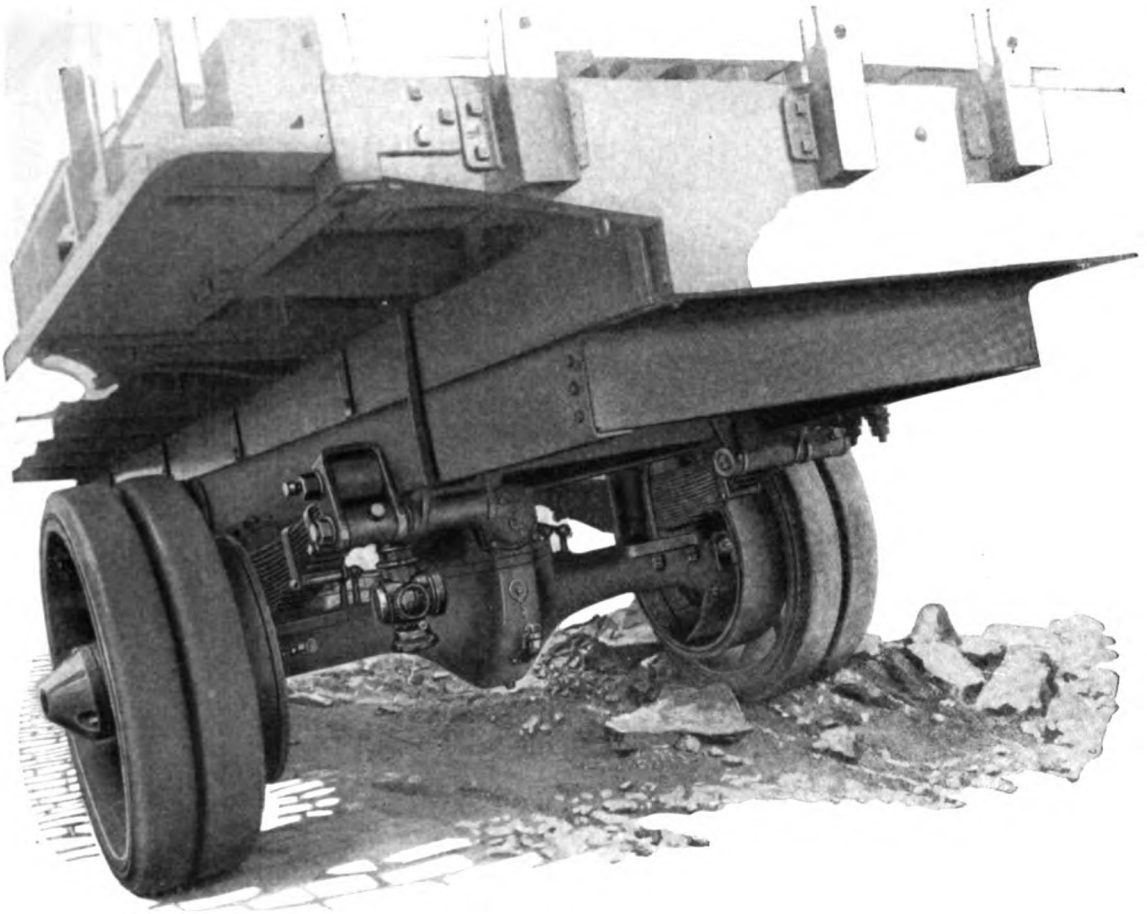
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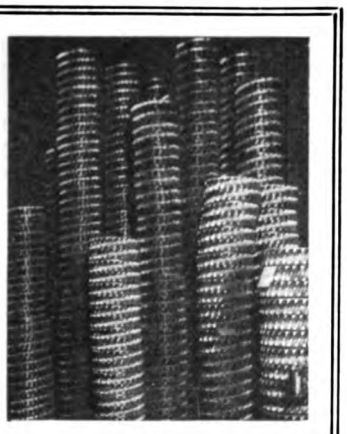
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A corner of the Worm Wheel Stock Room at Sheldon

WHEN YOUR TRUCK WITH ITS LOAD IS ROLLING ALONG

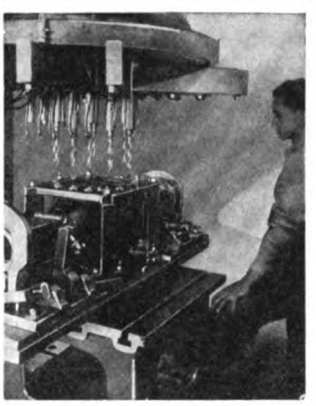
in a straight line over a smooth surface, it is improbable that axle trouble will develop, even though the truck may be heavily overloaded.

But the moment that either wheel strikes a cobblestone a glancing blow, or brushes against a curb, then two tremendous rending forces, two opposed pressures which represent thousands of pounds of dead weight, immediately act to tear the axle apart.

Sheldon Worm Drive Axles, by virtue of their semi-floating construction, are fully safeguarded from damage against these destructive forces when they are applied at the wheel rim.

Furthermore: the Sheldon bearings placed at the inner end of the drive shaft and at the wheel receive far less wear than those in other types of axles where bearings are placed only in the wheel.

Thus Sheldon truck axles insure lower cost haulage by eliminating the causes of accidents and quick wear.



*Drilling 12 **stud holes at once** in a worm-gear axle housing*

SHELDON

WORM GEAR AXLES

SHELDON AXLE AND SPRING CO. *Makers of springs and axles for heavy duty service for more than fifty years.* WILKES-BARRE, PA.

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Siege guns discharging their volleys of steel; Globe Tires discharging volleys of road shocks — both are important assets to America at war.

The remarkable Globe Tire tread, built like a multiple-leaved spring, of hand-laid sheet upon sheet of pure plantation gum, enables it to break up, radiate, and discharge road shocks instead of transmitting them destructively into the body of the tire.



GLOBE HANDMADE

GUARANTEED 6000 MILES

REDUCE THE OPERATING COST OF YOUR CAR

Hence longer tire life and lower cost of motoring—the important contributions of Globe Tires to cars, big and little.

Lithe fleetness and great endurance both are bred into this commanding tire. The brisk, smooth, long-lived performance of Globe Tires is due in part to a traction surface which grows smoother, harder, and more burnished with use, making it more and more impervious to cuts and bruises.

If we made only one Globe Tire a year, we could not make that single tire better than every Globe Tire that now goes out of our painstaking factory. Ours is the slower way of making tires, but the surer way of building prolonged and satisfying mileage.

Long Mileage Tires MUST Be Hand Made

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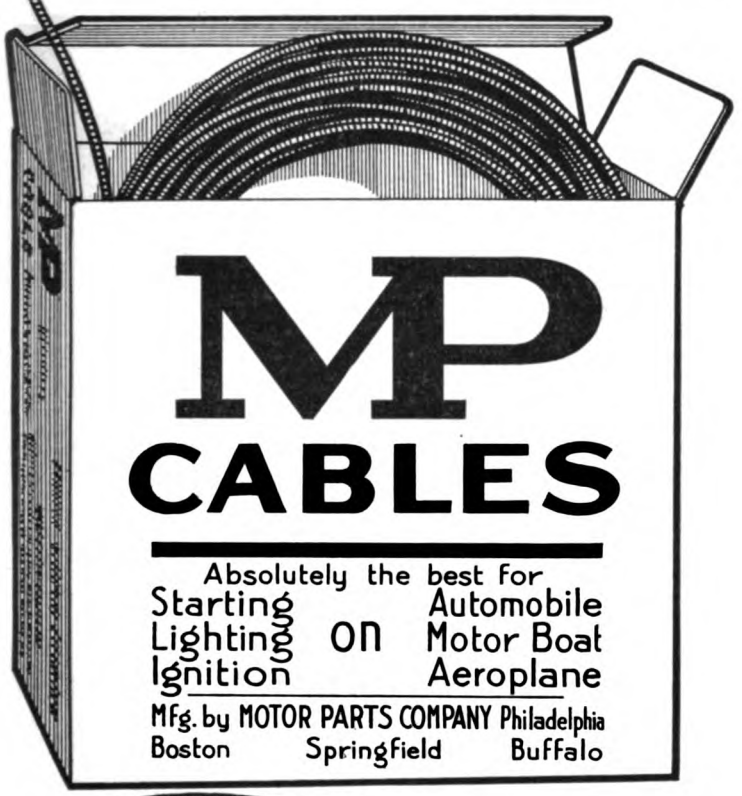


Responsible firms are invited to ask us about the liberal advertising we do at our expense in their home newspapers on behalf of hardware distributors handling Globe Tires on our special distributors' contracts. Exclusive, adequate territory will be given to those who qualify.

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THE car that dies on the road just after it has been in the shop, does not make a good, satisfied customer out of the owner.

Apart from tire difficulties, most troubles develop from weakness in the electrical equipment. Frequently the start of trouble is in poor wire, defective insulation or loose connections.



The stronger the cable and the better its insulation, the less trouble your customer will have with his car.

MP Cable is more than strong, it is durable — the result of quality and uniformity in materials, texture and insulation.

That very durability is what makes its use so important a factor in keeping cars and trucks on the road and out of trouble.

Use MP Cable on your next repair job, out of fairness to your customer and fairness to yourself. This sort of fairness in repairs has a way of bringing mutual profit to user and repairman alike.

MP Types
Primary and Secondary
Ignition Cables

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Starting Cables
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In stock for immediate deliveries, in convenient packages, guaranteed *good*, and economical. Your jobber can supply you, or a post card will bring you samples and prices by return mail.



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WHY I PICKED THE WONDERFUL BRISCOE





"***SERVICE***—that is the spirit on which my business success is built. So, in choosing the car I should sell—I kept ***service - to - my - customers*** uppermost in my mind.

"I wanted the car with the most dependable motor. I wanted the car with lowest operating cost. I wanted the car that represented the highest value for the money.

"So I chose the Briscoe.

"Briscoe performance has pleased my customers. The half-million-dollar motor—the beautiful Briscoe body designs—the many Briscoe extras—these are the features responsible for my success. The dealer who sells the Briscoe can't help but make money—for the Briscoe is the light car most in demand."

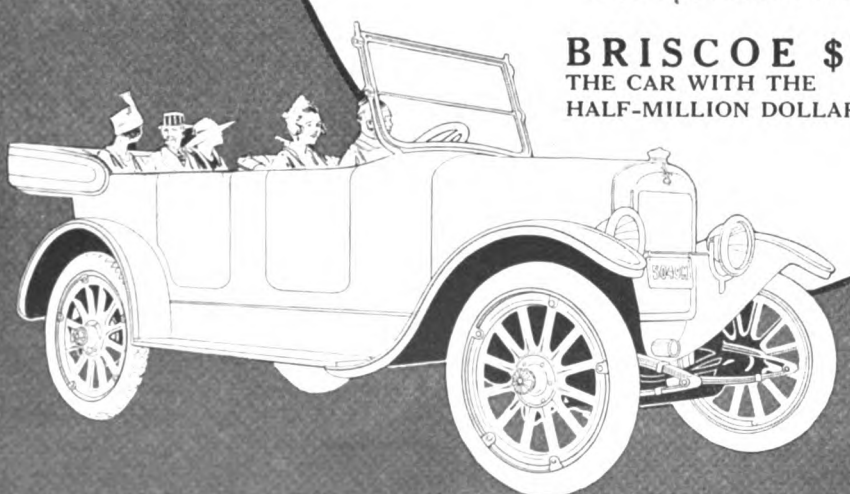
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"The Light Car Most in Demand"

There's the key to the Briscoe dealers' success. The Briscoe franchise, for many reasons, is the most valuable the dealer can get. Worth thousands of dollars a year. Perhaps your territory is open. Address

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BRISCOE MOTOR CORPORATION
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BRISCOE $725
THE CAR WITH THE
HALF-MILLION DOLLAR MOTOR



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The UNDERHOOD Motor Heater

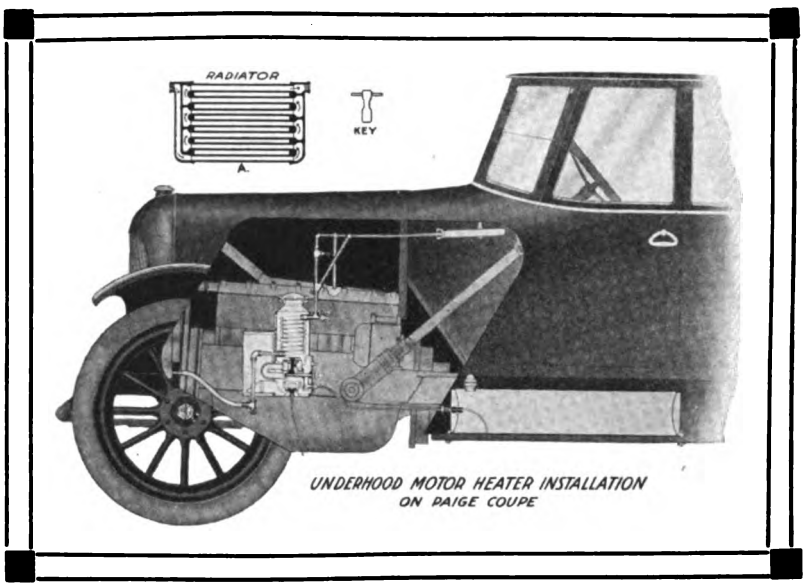
The Only Heater on the Market That Heats the Motor Continuously When the Car is Parked on the Street or Garage

Draws the water from the lowest point of the radiator, heats it to a very high temperature and then injects it into the water manifold.

No cost for operation, as the UNDERHOOD saves twenty-five per cent of the gasoline consumption.

Liberal offer for State dealers. Write to-day.

Underhood Motor Heater Corporation
705 Book Bldg. - Detroit



UNDERHOOD MOTOR HEATER INSTALLATION ON PAIGE COUPE

Berger Steel Bins and Shelving Used by Elgin Motor Car Co.

THE ARMOR PLATE OF MODERN BUSINESS

THE fact that the Elgin Motor Car Company and other prominent automobile builders use Berger Steel Bins and Shelving suggests the value of this equipment in eliminating waste and delay in garages.

Berger Steel Bins and Shelving offers 25% more storage capacity than wood; carry heavy loads without sagging; require no maintenance expense; are fire retardant; and provide for orderly, accessible arrangement of stock.

May we fully explain the economy of this equipment?

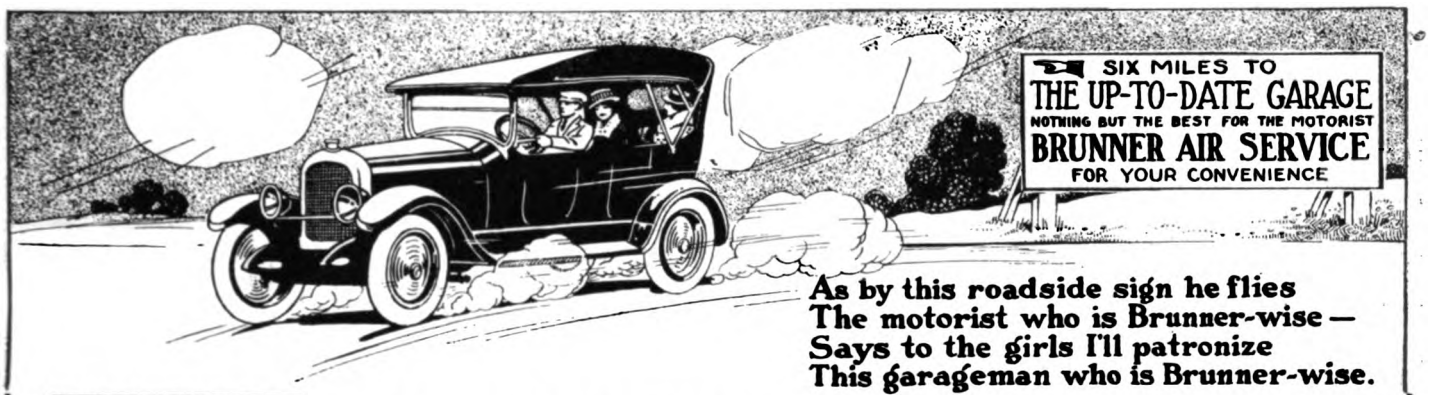
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The Berger Mfg. Co., Canton, Ohio

Branches: Boston, New York, Philadelphia, Chicago, St. Louis, Minneapolis, San Francisco.
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Wh[illegible]r [illegible]tion Motor World—It identifies you

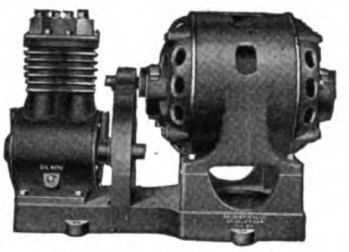
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As by this roadside sign he flies
The motorist who is Brunner-wise—
Says to the girls I'll patronize
This garageman who is Brunner-wise.

WE USE A BRUNNER AIR COMPRESSOR
FREE AIR
FOR YOUR CONVENIENCE

Mr. Garageman, the Brunnerwise Motorist will be very much in evidence this winter, and you should not overlook his trade. He will be patronizing the garage displaying the Brunner sign.



IMPROVE YOUR WINTER SERVICE

There is no better way to make the cold winter months profitable than to improve your service, because the cold weather motorist is a good spender looking for prompt and efficient service—and the garageman who offers that class of service will find his winter business more profitable. Brunner service would prove a step in the right direction. Install a Brunner outfit.

INVESTIGATE THE BRUNNER AIR COMPRESSOR



The Brunnerwise Motorist

Mr. Garageman, the selection of your air compressor equipment is a matter that you should give your very careful attention, before making your selection you should read Brunner's Garageman's Handbook on Compressed Air and get the facts concerning the Garage Air Compressor situation to-day—this book with our No. 14 catalogue and the name of the Brunner Jobber covering your territory will be mailed to you upon request.



The Brunnerwise Garageman

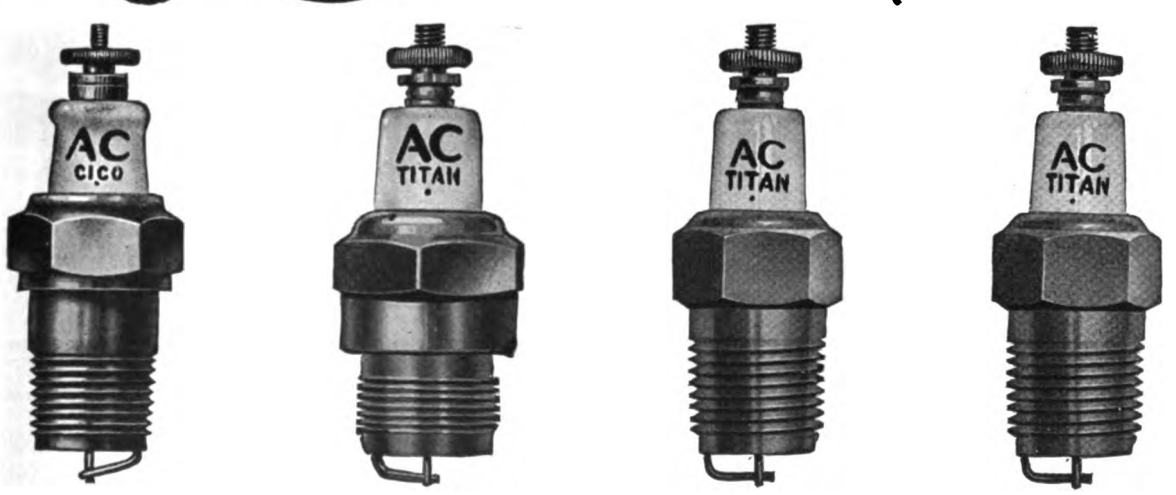
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The Standard Spark Plug of America

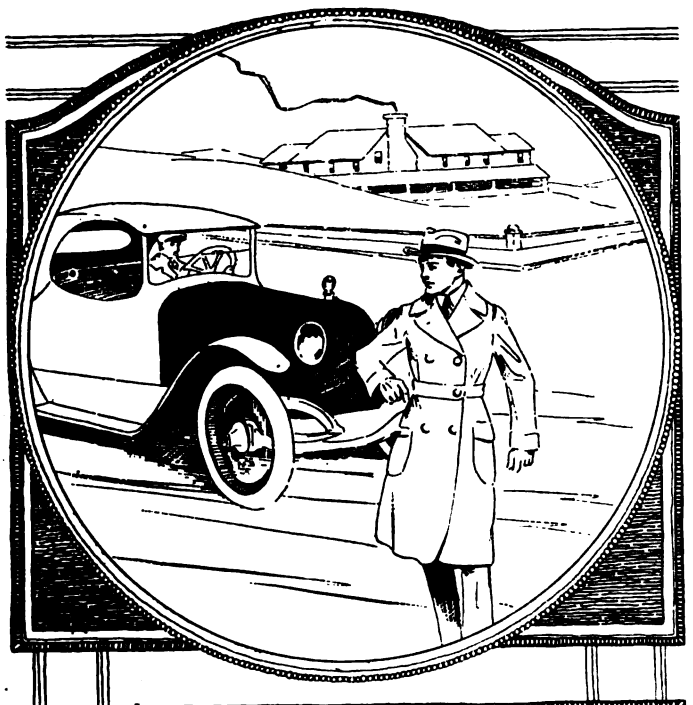


Special for Ford Cars A C CICO	⅞" Regular For Maxwells A C TITAN	⅞" Regular For Willys-Overland A C TITAN	⅞" Regular For Studebakers A C TITAN

AC Plugs have proven to be the best under all conditions. That is why 80 manufacturers of Automobiles, Trucks, Tractors and Aeroplanes use them for regular equipment. The leading race drivers are using them. *Your* motor will not give its best performance unless equipped with AC. You will come to them in time. Why not buy a set *now* and note the improvement?

CHAMPION IGNITION COMPANY, Flint, Michigan, U. S. A.

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Cold Weather Rattles In Your Motor's Throat

means trouble, just as it does in your own. When you hear it protect your motor with

Invincible

Radiator and Hood Covers

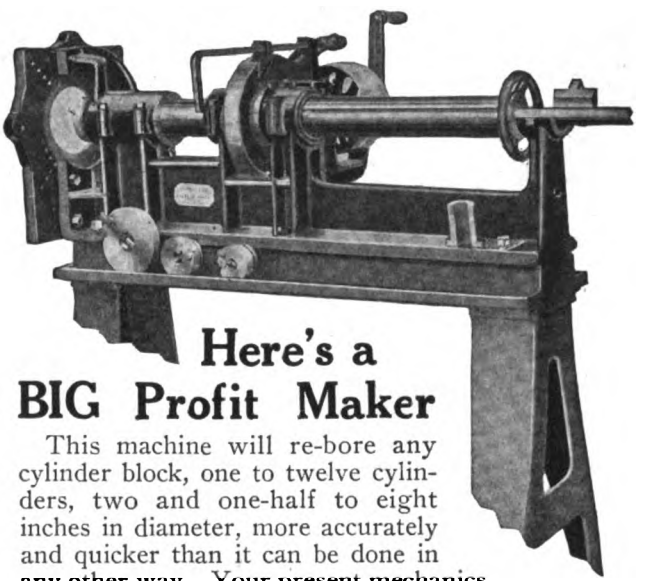
Every little item of cold weather protection for motors and radiators is taken care of by them.

Not awkward or troublesome, but tailor fitted, snug and trim. The quick roll and unroll strap for the radiator cover makes them convenient, handy and appealing.

All makes and models of automobiles can be tailor fitted with these covers—a size and form for every car.

A complete catalogue will be sent you upon request.

PETERS & HERRON DASH CO.,
77 S. Gift St., Columbus, Ohio



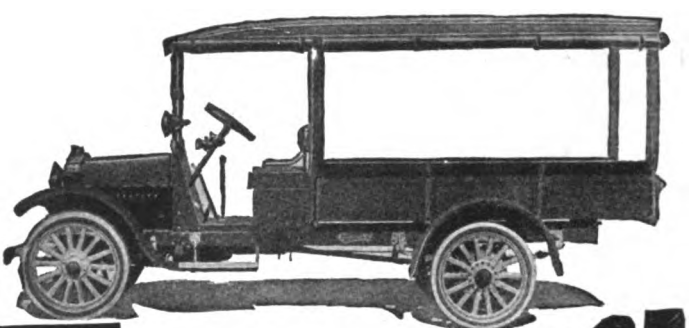
Here's a BIG Profit Maker

This machine will re-bore any cylinder block, one to twelve cylinders, two and one-half to eight inches in diameter, more accurately and quicker than it can be done in any other way. Your present mechanics can operate the

Marvel Re-Boring Machine

It will make BIG profits for you, double your repair business and turn shop losses into a handsome net profit. It is by far the most efficient, rapid, simple and accurate boring machine made. It will pay for itself quick. Write for details today.

THE MARVEL MACHINERY CO.
Minneapolis Minn.



Commerce

1 Ton Trucks

A Year Ahead *of* Other Trucks

The only truck having everything necessary on it—when you buy it

Three types of bodies for all models—Remy Starting and Lighting—Stewart Vacuum System—Pierce Governor—Windshield—Bumper.

Commerce Truck Motor, Detachable Head—Torbensen Rear Axle—Detroit Steel Products Company Springs.

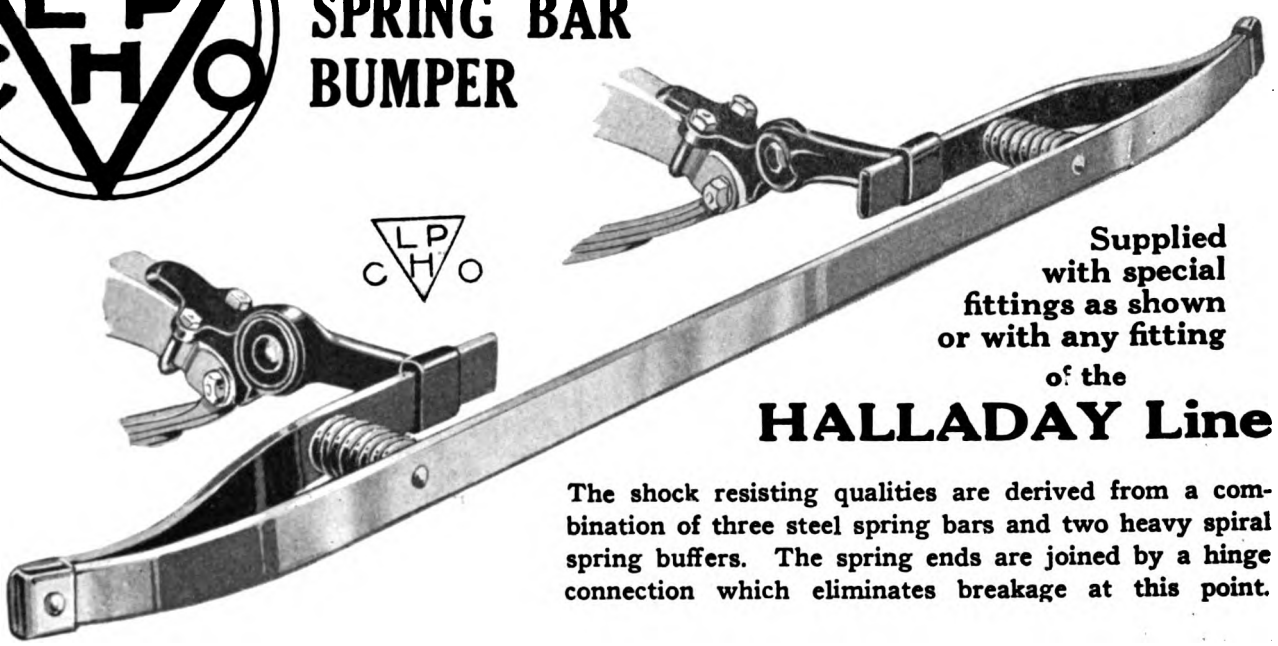
One-Ton Chassis	$1340
With Express Body	1375
" Post Top and Storm Curtains	1450
" Standard Stake Body	1490

The Commerce Motor Car Company
DETROIT MICHIGAN

W. H. Brinkerhoff, Eastern Dist. Mgr.
Belmont Ave., Elmhurst, Long Island, N. Y.

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THE NEW HALLADAY MULTIPLE SPRING BAR BUMPER



Supplied with special fittings as shown or with any fitting of the

HALLADAY Line

The shock resisting qualities are derived from a combination of three steel spring bars and two heavy spiral spring buffers. The spring ends are joined by a hinge connection which eliminates breakage at this point.

L. P. HALLADAY COMPANY, Streator, Illinois

Distributors: Asch & Co., 16-24 W. 61st Street, New York City; E. L. Thompson Co., 817 Boylston Street, Boston, Mass.; Gray-Heath Co., 1440 Michigan Avenue, Chicago, Illinois; Sanford Brothers, Chattanooga, Tenn., Southern Distributors; Hughson & Merton, Inc., San Francisco, Los Angeles, Portland and Seattle, Pacific Coast Distributors.

Quick! *Handy!*
Economical!

Black & Decker LECTROFLATER

Electric Air Compressor

Model No. 2 with Carriage

The most capable air pump of its size on the market. Will inflate a 33 x 4 tire from flat to full pressure in two minutes. Electrically driven from any electric light socket. Uses either A.C. or D.C. Will inflate ten tires at a cost of one cent for current. Grease—not oil—lubricated. No oil to ruin tires. Requires attention only four times a year. Scientifically air cooled. No working parts exposed. Finely constructed of best materials throughout. Built for hard continuous service. Fully guaranteed.

Write today for interesting booklet, *"The Friendly Touch."* It gives complete information and prices of the entire line of Lectroflater Air Compressors, including curb stations, wall outfits, tank and pump outfits, automatic outfits, etc. Prices range from $50 up.

JOBBERS. Attractive sales proposition for distributors. Write for details.

BLACK & DECKER MFG. CO.
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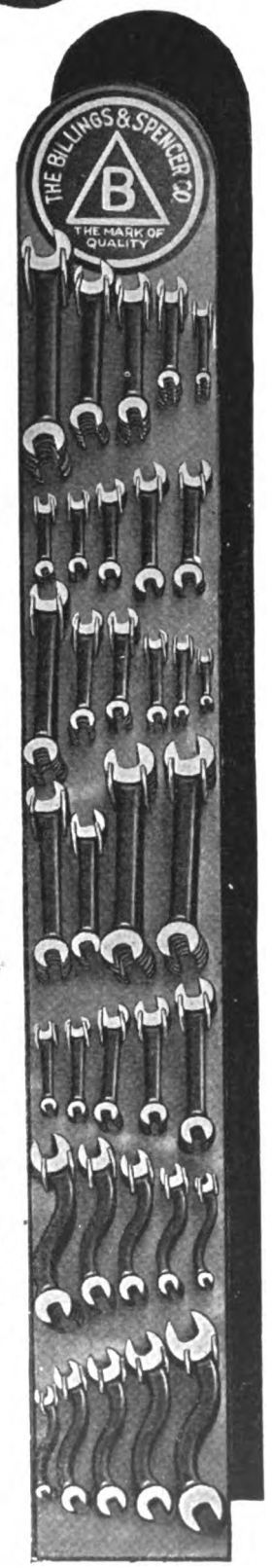
Distributors in Canada *Northern Electric Company* Montreal



The ideal outfit for tire distributors, car dealers, garages, etc. Equipped with rubber wheels and tool tray. Can be moved anywhere. To operate, merely attach connection to any electric light socket.

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TRADE MARK



There Are All Kinds of Ways of Selling Wrenches But There Is Only One Right Way

—and that is the way originated and today largely dominated by the Billings & Spencer Company.

The one right way to sell wrenches is to sell them directly to the consumer from off the familiar, sale-creating Billings & Spencer Wrench Board, more than 6,000 of which are being displayed by dealers in all parts of the country.

You do not so much sell the wrenches as the wrenches sell themselves. They are there before the purchaser's eyes. He sees the type and size he wants and he picks it out. This simplifies selling and increases sales.

Each Billings & Spencer Wrench Board is easily identified by the triangle trade-mark medallion which is affixed to the head of each board, and each wrench on the board is stamped with the same famous triangle trade-mark.

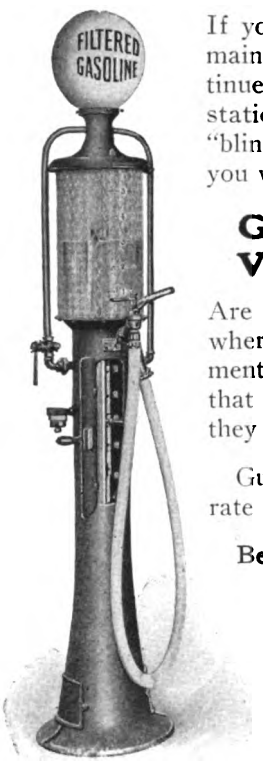
This mark creates confidence on the part of the consumer. This mark clinches sales. This mark guarantees the purchaser unqualified satisfaction and protects the reputation of your store.

Employ the successful sales methods employed by more than 6,000 dealers and display the Billings & Spencer Wrench Board—originated by the pioneer drop forgers in the field. Catalog on request.

BY INVITATION MEMBER OF

THE BILLINGS & SPENCER CO.
HARTFORD, CONN. U.S.A.

MONEY TALKS WITH DEALERS



If you still think business will remain good and car owners will continue to patronize garages and gas stations where old - fashioned "blind" pumps are in use—it's time you woke up.

GUARANTEE VISIBLE PUMPS

Are getting the business everywhere. There is no sound argument in defense of filling systems that do not show customers what they are paying for.

Guarantee pumps are fast, accurate and never need adjusting.

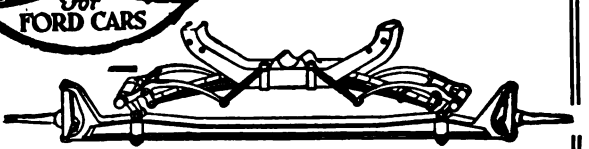
Better write us today.

GUARANTEE LIQUID MEASURE CO.

Farmers Bank Building
Pittsburgh, Pa.

The Original Double Arm SHOCK ABSORBER
W & C
For FORD CARS

$10 Per Set of 4



W & C

The Original Double-Arm Shock Absorber Makes As Much Difference As Pneumatic Tires on Fords

Installing a set of W & C double-Arm Shock Absorbers is as good as substituting pneumatics for a set of hard rubber tires. Their resiliency reacts to the immediate advantage of both passengers and mechanism.

They are as desirable on Ford cars as air-filled tires. You *know* how desirable *that* is.

Ask your dealer to-day—and say "W & C."

Some territory still open that needs live dealers. WRITE.

P. H. WEBBER COMPANY
HOOPESTON ILLINOIS

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READY TO USE



CHEAPER TO USE

KESTER CRYSTAL CORE SOLDER

for the repair of battery terminals, gasoline pipe and tanks joints, electric light connections, radiator leaks, cracked fenders, speedometer flexible shaft, spark plug terminals and general garage use.

NO WASTE  **NO DELAYS**

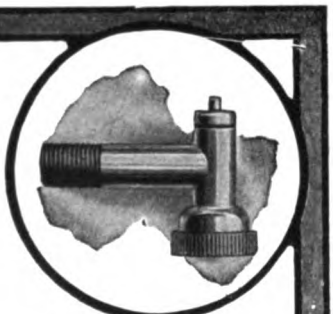
The solder is a hollow wire filled with an acid flux which flows as the solder is used. There is no time lost in hunting, preparing or applying the flux, as it is contained within the solder and ready to use. Quicker, neater and cleaner results.

Sold in one pound coils and on one, five and ten pound spools. Free sample sent on request for trial purposes.

Order through Your Jobber.

CHICAGO SOLDER CO.
CHICAGO ILLINOIS

You can't tell how much Bengal Tiger there is in a white rabbit until you put him on a meat diet





.....and you can't tell how many miles your tires can give you until you put them on a REGULATED, MEASURED, air diet. Just so many pounds pressure, no more and no less.

If you pumped up your tires every time they fell below the pressure specified by the tiremaker, they would last for the maximum distance. Don't say pumping is too much trouble. With a

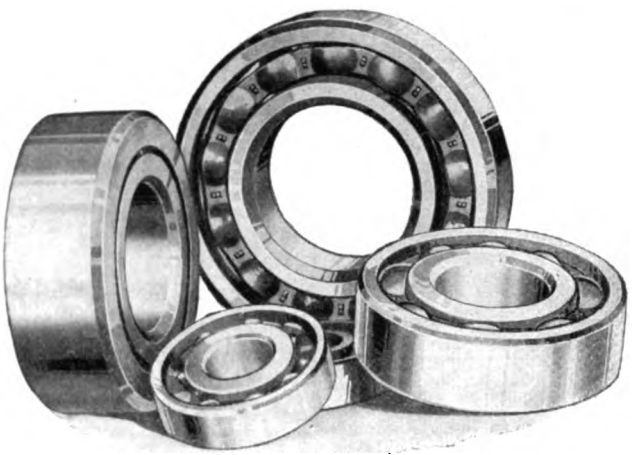
SCHRADER UNIVERSAL PUMP CONNECTION

it is no trouble at all.

Ask your dealer to show you how it works.

Price Thirty-five Cents.

A. Schrader's Son, Inc.
783-803 Atlantic Ave.
Brooklyn, N. Y.



SCIENCE has reached such a stage that most machines have not attained their highest development until they are equipped with ball bearings.

Naturally so—because only by reducing friction and wear to a minimum do machines become most effective.

New Departure Ball Bearings are your logical choice, because they provide strength, stamina and serviceability, as well as eliminating friction evils.

Back of the New Departure product is a remarkably competent organization for co-operating with you in the working out of your own particular problems.

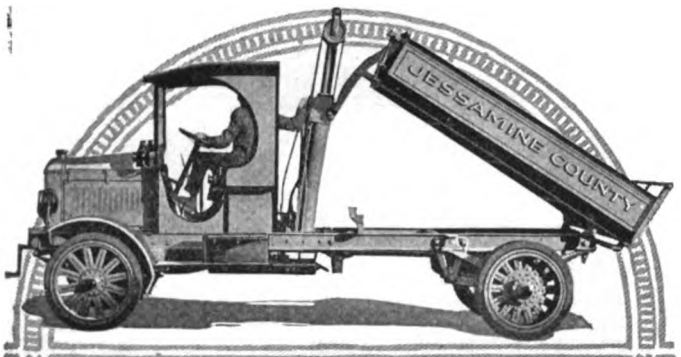
We can save you needless experimenting if you will send us your blue prints and information regarding character of work, speed and load data, etc.

THE NEW DEPARTURE MFG. CO.
Bristol, Conn.

Conrad Patent Licensee

NEW DEPARTURE BALL BEARINGS

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ARMLEDER
Motor Trucks

Exclusive Agency Contracts
are now available to
Live Responsible Dealers
in
Valuable Territory
for the representation of
The "ARMLEDER" A Quality Truck

The makers are financially strong, long established, and offer a liberal contract.

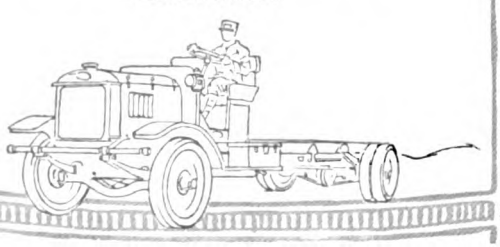
The dealer is assured of the strongest co-operation in selling and service.

Dealers must be prepared to stock a reasonable number of trucks, a supply of essential replacement parts and operate a satisfactory service department.

The Armleder proposition merits your investigation.

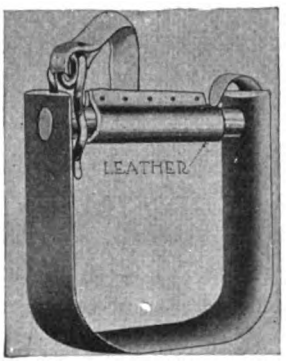
Write now!

The O. Armleder Company
Twelfth, Plum & Charles Streets
CINCINNATI



BETTER TRACTION FOR TRUCKS

Maximum Grip



Minimum Bump

WOODWORTH
EASYON SOLID TIRE GRIP

They save the tires and do not jar the machinery

EASYON SOLID TIRE GRIP

The Easyon Solid Tire Grip is made from half oval steel U-shaped to fit over the tire and rim and having a round leather covered bar across the rim of the wheel, which is locked in place with a spring pin. The rounded side of the half oval steel comes next the tire and thus a perfectly smooth, even surface bears on the rubber. The leather covering on the round bar across the felloe of the wheel prevents danger of the wood being marred.

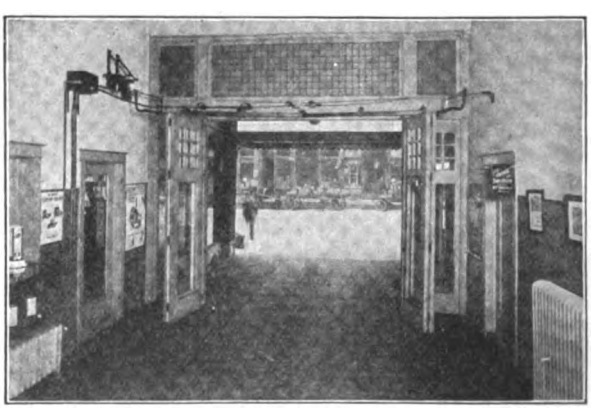
When run on pavements the round bar raises up from the felloe of the wheel so that no bumping is caused, but when the wheel begins to slip on the road the round bar pulls up against the spoke and the grip assumes a slanting position so that one edge projects from the tire, taking a deep hold in any soft road surface.

Made for all sizes of single or dual tires.

Dealers and Jobbers, write for proposition.

WOODWORTH MFG. CORP'N
Niagara Falls New York

R-W STEWART
Electric Door Opener and Closer



CUTS COST OF OPENING DOORS 97½%

Saves the time of at least one two-dollar-a-day man. Current for operating the R-W Stewart Electric Door Opener and Closer costs less than 5c a day. Saves time. Saves money. Saves heat. Pleases your patrons.

Doors always under perfect control. Push buttons in the office, repair shop or any point in the garage, open and close the doors. Electric operator enables you to handle more patrons with less congestion.

Write for interesting pamphlet "R-W Stewart Electric Door Opener." Sent without obligation.

Richards-Wilcox Manufacturing Co.

SAN FRANCISCO LOS ANGELES NEW YORK CHICAGO PHILADELPHIA MINNEAPOLIS BOSTON ST LOUIS

AURORA, ILLINOIS, U.S.A.
Richards-Wilcox Canadian Co. Ltd. London, Ont.
"A hanger for any door that slides"

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"I put My Car up for the Winter!"

"The Old, Old Story oft repeated: Unsatisfactory lubrication—Oil would not flow at Zero—Scored Cylinders."

"It's different now—I have found an oil which 'Flows Freely at Zero'—gives perfect lubrication and leaves less carbon."

"I run her all year 'round on

SUPREME AUTO OIL

Sold everywhere you see the Sign of the Orange Disc."

MANUFACTURED BY

GULF REFINING COMPANY

The Largest Independent Refining Company in the World

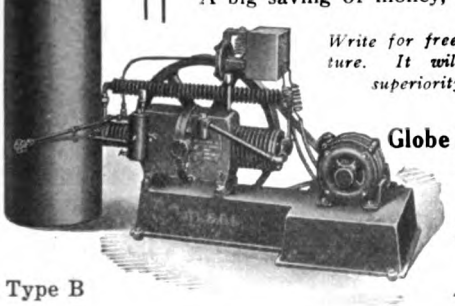
Savings Insured by Globe Compressors Make Free Air Service Pay

"The air compressor we purchased from you some 5 or 6 years ago is still running, and has not caused us any trouble of any kind, or any expense," writes a GLOBE user.

Profit and loss in your Free Air Department balance on the vital point of trouble and expense. The GLOBE Two-Stage Equipment that is free from both, insures savings that make your service pay.

GLOBE affords portable or stationary equipment, with or without storage tanks and motor. GLOBE Unloader permits the compressor to start without any load. A big saving of money, time and labor.

Write for free illustrated literature. It will prove GLOBE superiority and profits.



Type B

Two-Stage Automatic Air Plant, Complete

Globe Manufacturing Company

Dept. B
BATTLE CREEK
MICHIGAN

Are You Making Money?

—or losing it?
—just how much are you ahead or behind?
—what part of your stock or shop is making and what part losing?
—and why?

Motor World's Simplified System of Accounting

—will answer all these questions. It will tell you exactly where you stand *at any time*, where your profit and loss take place.

It is the CHEAPEST, SIMPLEST AND SUREST METHOD of finding and stopping losses; of checking up purchases, sales and stock on hand.

You don't have to be a bookkeeper—the

Complete Instruction Book Shows You Exactly How to Use It

You can start and run it yourself, or *any man* in your garage or shop can do it. SENT ON 5-DAY APPROVAL. Get it. Look it over. If you are not satisfied with it, send it back and your money will be refunded. DON'T LET ANOTHER DAY PASS WITHOUT IT. Saves its cost—$15—the first month you use it.



Use the Coupon Now

OVER 1500 GARAGE, REPAIR AND SUPPLY MEN USING IT NOW

TALLMAN, ROBBINS & CO.

Exclusive authorized manufacturers of Motor World Simplified System of Accounting

314 W. Superior St., Chicago
320 Broadway, New York

TALLMAN, ROBBINS & CO.
314 West Superior St., Chicago.

Dear Sirs:

Ship me complete "Motor World Simplified System of Accounting" with Book of Instructions. I enclose $15, in full payment with understanding the same will be refunded if I am not satisfied and return the System within 5 days.

Name .....

Street and Number.....

City and State.....

11-14-17.

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WILLIAMS'

SILVERBEAM SEARCHLIGHTS SELL

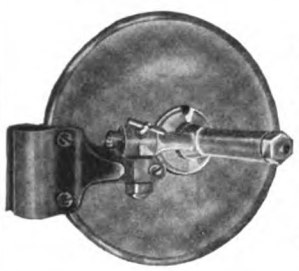
More readily than lower priced lamps when side by side on the dealer's counter, because they are

HANDSOME—Designed on beautiful lines, in harmony with the refined fittings demanded in the modern motor car.

WELL MADE—Superior workmanship showing at every point. Anti-rattling, heavy plating, baked enamel, connections complete.

PORTABLE—Readily detached to serve as trouble lamp—ten feet of cord gives easy access to every part of car.

LAW COMPLYING—The Williams locking bracket guards against infraction of laws regulating elevation ahead.



SILVERBEAM

$9.00 Baked enamel and nickel, in black or colors, convex lens, 6-inch reflector. With 7-inch reflector $10.00

Proven by three years' satisfactory service

Liberal Dealer Discounts

At All Jobbers, or Write

Williams Mfg. Co.

310 N. Flower, Santa Ana, Cal.

DETROIT BATTERIES

last approximately six months longer than the average battery. They are about 15 per cent more powerful in proportion to size and cost.

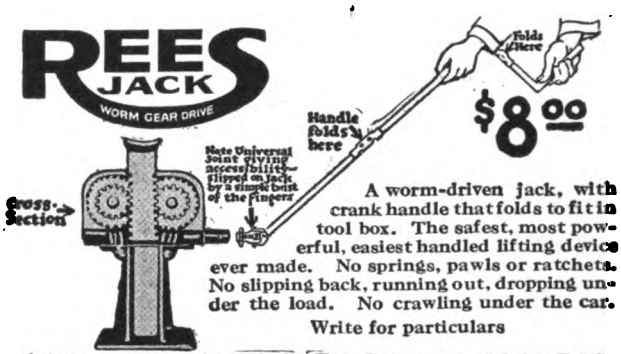
This is why their sale is now increasing on an average of over 60% every four weeks—a record no other battery has ever approached.

DETROIT BATTERY CO., Detroit, Mich.

Eastern Branch, 68th and Broadway, New York City

REES JACK

WORM GEAR DRIVE



$8.00

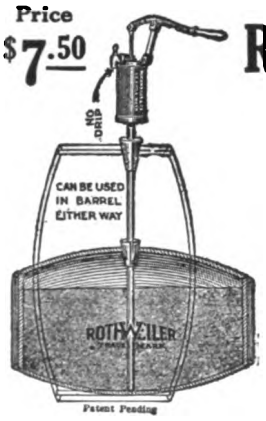
A worm-driven jack, with crank handle that folds to fit in tool box. The safest, most powerful, easiest handled lifting device ever made. No springs, pawls or ratchets. No slipping back, running out, dropping under the load. No crawling under the car.

Write for particulars

THE SERVICE CORPORATION

FRICK ANNEX PITTSBURGH, PENNA

Price **$7.50**



Rothweiler Pump

Empties a Barrel or Drum Completely

No Waste ***No Drip***

Good for Oil, Gasoline, Turpentine, Light Paint, etc.

Works Easily, Quickly and Efficiently

A Great Trouble Saver

ROTHWEILER & CO.

Seattle, Wash.

Victor No. 50

A spot lamp of rare beauty. Harmonizes in appearance with car lamps. Convenient—with inset mirror for daylight driving. Sells for $5.00. Write for price list and literature.

THE CORCORAN VICTOR CO.

705 Reading Road Cincinnati, Ohio

DEMAND

DUTCH BRAND





Demand **Dutch Brand** Rubber Cements and Auto Chemical Specialties of your jobber. One **Dutch Brand** Product helps sell all the rest of the line. Build up an endless chain of sales. Stock a trial order. Handsomely illustrated catalog of complete line sent on request.

VAN CLEEF BROS.

Manufacturers Dutch Brand Rubber Cements and Auto Chemical Specialties

7711 Woodlawn Avenue Chicago, Ill.

"Look for the Dutch Girl on the Label"

"BRAINS IN THE REAR AXLE"

BAILEY

Non-Stall

DIFFERENTIAL

Bailey Non-Stall Differential Corp.

1124 Michigan Avenue Chicago, Ill.

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Crane PATENTED

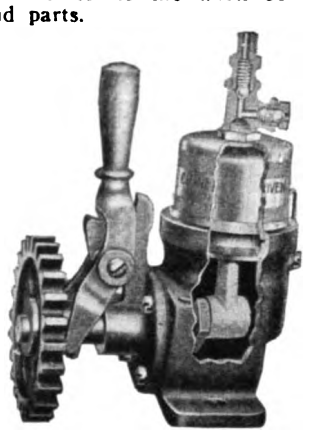
Engine-Driven Tire-Pump

DOES what *no* other pump *can do*. Because BUILT as *no* other pump *can* be built.

Piston works *through* a Packing-Ring, reducing wear to the *minimum*. Beveled base of Ring shaves surplus oil off piston at every stroke. Permits ample lubrication, but prevents oil passing Ring.

Ring is endless. No gaps for air to leak out or oil to leak in. Can be instantly adjusted (by turning cylinder) to maintain air-tight, oil-proof fit, and insures 97% efficiency. This high efficiency enables the CRANE to do the work of pumps twice its size, weight and parts.

And small size, light weight, few parts and simplicity mean low production-cost. That's why the CRANE sells for $10 complete despite high grade materials and finest workmanship.



The full story of the CRANE and its patented Packing-Ring is told in an interesting little Folder — just off the press. Write for FREE copy today.

BAY STATE PUMP COMPANY

100 Purchase Street
Boston, Mass.

Export Dept., 100 Broad Street
New York (115)



$1150 CHASSIS

KOEHLER TRADE MARK

TON AND A QUARTER
The "Go Getter" Truck

Valve in Head 35 hp. Motor; Eisemann High Tension Ignition; Stromberg Carburetor; Torbensen Internal Gear Drive Rear Axle; Cast Finhead Built-Up Type Radiator; 129" Wheelbase.

Dealers—Write for Unusual Selling Plan.

H. J. Koehler Motors Corporation
150 Ogden Street, Newark, N. J.

LEWIS VALVES Toledo

Mean More Power

Cheap Valves warp, cause loss of power, loss of compression, difficulty in starting, reduction of mileage.

It pays to be *sure* of your valves.

Lewis special heat-treated valves make users of ordinary common valves literally "sit up and take notice." Lewis has learned the secret of making better valves by concentration and specialization—that's why Lewis Valves are better.

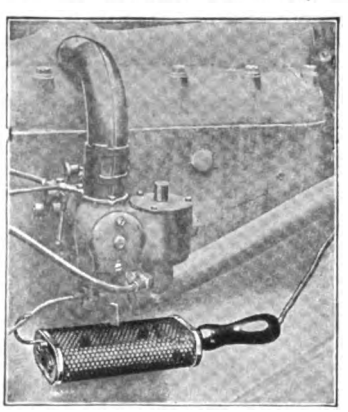
There's more to valves than some people think —would you like to know? Write Lewis.

Lewis Electric Welding & Mfg. Co.
TOLEDO, OHIO

Presto

Heaters In Your Stock Insure

WINTER BUSINESS— Cold Weather Made Profitable



Insures a Warm Carburetor After An All Night Stand

The great economy of PRESTO Heaters sells them in tremendous quantities.

Attach to the nearest electric light socket. Serve better and cheaper than a garage heater, because they deliver the heat directly under the hood where most needed.

New handle and hook make PRESTO Heaters more valuable than ever. Hang anywhere under the hood.

All PRESTO Jobbers and Dealers have the PRESTO Heater—the blue ribbon winter seller.

METAL SPECIALTIES MFG. CO.

338-352 N. Kedzie Ave., Chicago
Eastern Branch: 16-24 W. 61st Street, New York City
Western Branch: 149 New Montgomery St., San Francisco, Cal.

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Gives More Power Greater Speed

IMP CARBON CHASER

Better Ignition and Uniform Combustion

The New Fuel Element

SAVES 25% GASOLINE

ELIMINATES CARBON

One IMP Tablet in every FIVE Gallons of Gasoline will do the work. Retail price east of Rockies 75c. can of 20 tablets. Exceptional discount to Jobbers and Dealers.

Convince yourself, Mr. Dealer—send for FREE TRIAL

And Attractive Proposition

IMP CARBON CHASER CORP.

1465 BROADWAY NEW YORK

Dept. 129

STOP-THIEF

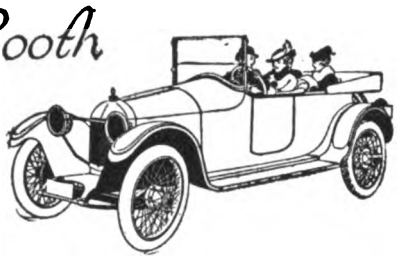
"The device for Fords that does it"

Locks in "high" and "reverse" at same time—of course no car can go forward and backward at the same time.

Essansee Lock Company

503 Land Title Building Philadelphia

Scripps-Booth



In both the four-cylinder and the eight-cylinder models, Scripps-Booth combines the height of motor luxury with light weight, in a way never before achieved. The resulting comfort and economy have given Scripps-Booth a unique position with a highly desirable clientele.

Four-cylinder Roadster.....$1250
Eight-cylinder Four-Pass..... 1425

Scripps-Booth Corporation
Detroit, Mich

CARBON FREE



Patented March 2, 1915; Feb. 26, 1916

Can you say that of **your** motor?

Can you step on the accelerator any time, anywhere and know that every ounce of power your engine has is at your command?

If you are using Pressure Proof Piston Rings, yes; if you aren't, the chances are even that the carbon devil is going to interfere.

"New Facts About Piston Rings"

will tell you why. It's free to you.

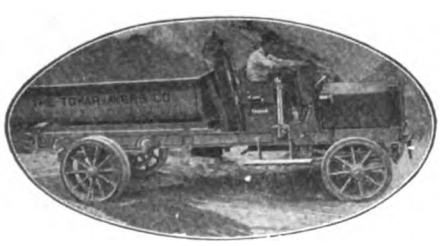
PRESSURE PROOF PISTON RING CO., 171 Massachusetts Ave., BOSTON, MASS

IMMEDIATE DELIVERIES

UNITED TRUCKS

2-TON 3½-TON 4-TON 5-TON

Immediate deliveries mean *additional* profits! Wire us your requirements and for option on your territory.



United Motors Company

671 NORTH STREET

GRAND RAPIDS, MICHIGAN

AUTOMOTIVE INDUSTRIES

The Automobile

THE industrial authority on all matters connected with the automotive industries.

The oldest weekly journal in the field.

Its scientific articles are complete and authoritative—its editorials of importance—its news accurate and valuable.

Published weekly, $3.00 per year.

Canada $5.00, Foreign $6.00.

239 West 39th Street, New York, N. Y.

THE LAIDLAW CO., Inc.

16 W. 60th St. New York City

AUTOMOBILE FABRICS

A Fabric for Every Purpose for Open, Closed, and Convertible Bodies

BETHLEHEM MOTOR TRUCKS

"Dependable Delivery"

$1245 1¼ Ton Chassis

$1305 1¼ Ton Complete with body and cab

$1775 2½ Ton Chassis

$1850 2½ Ton Complete with body and cab

F. O. B. ALLENTOWN

Built to dominate the truck business in your territory—backed by the Bethlehem guarantee and a strong national advertising campaign. Is your territory covered?

BETHLEHEM MOTORS CORP'N

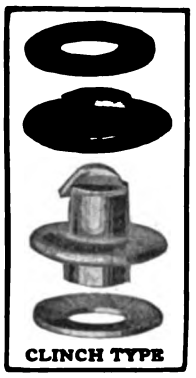
ALLENTOWN, PA.

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CINCH
CURTAIN FASTENER

CHURCH PATENTS PENDING

The easiest operated—non-rusting, non-tearing fastener. *Write for samples.*



CLINCH TYPE

NEW YORK CHICAGO **L. C. CHASE & CO.** BOSTON DETROIT

Quality in Motor Trucks

It has been our endeavor to create a commercial vehicle that would excel first of all in the quality of the material used, and, second, in the economy of its operation.

Our reputation for producing the most lasting truck is recognized by our many users.

We offer for your convenience the following sizes:

1½-ton 3½-ton
2-ton 5-ton
7-ton

Hurlburt Motor Truck Company
133rd St. and Harlem River New York, N. Y.

POVASCO
PRODUCTS

Indestructibility, Beauty, Tilting and Hand Warming are the Povasco features that place it beyond any other Steering Wheel. Our proposition on wheels and radiator caps is interesting to distributors and manufacturers

POUVAILSMITH CORPORATION
Poughkeepsie, New York



Plain Povasco Tilting & Warm Hands Radiator Caps

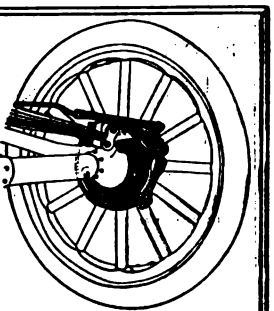
MR. DEALER

One dealer in a town of 3000 people installed Forty Sets of "The Improved Emergency Brakes" last March. Another dealer in a crossroads town installed twenty-five sets this summer.

All you need to do is to show a Ford Owner this Brake and he buys it.

Simple to install, no holes to drill. Why not cash in on this fast-selling accessory?

Write for our Disc. and Big Selling Plan.



Retail price $10.00 per Set

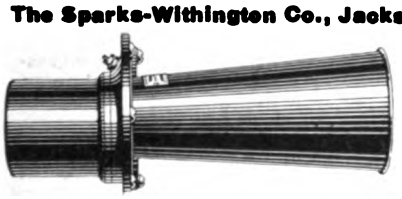
L. A. LEATHERS CO. BROOKVILLE, PA.

SPARTON PRODUCTS
First Choice of America's Best Cars

Sparton Motorhorns—hand-operated and motor-driven.
Sparton Gasoline Vacuum System.
Sparton Honeycomb Radiators and Sparton Radiator Fans.

The Sparks-Withington Co., Jackson, Mich., U. S. A.

(106)



SAFETY FIRST SOUND SPARTON

A 1-INCH FIRING SURFACE

Greater Power
Quicker Acceleration
Less Carbon

BERGIE National SPARK PLUGS

10% to 20% More Mileage

Price $1.00 Each

Dealers Write

BERGIE NATIONAL SPARK PLUG CO., Rockford, Ill.

Miles Cheaper

Users Report Records of

Settle the MILEAGE PROBLEM— Use

8,000
10,000
12,000
15,000
Miles

TEMPERED QUAKER RUBBER

Quaker City Rubber Co. Philadelphia

"TRIPLEXD"

The New Gasoline Hose.
Metal, Rubber and Fabric welded into one unit. Guaranteed for one year.
Write for details.

METAL HOSE & TUBING CO. INCORPORATED
RAYMOND & TILLARY STS.
BROOKLYN, N.Y.

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Stop Losing Money on Used Cars

Get the

National Used Car Market Report Service

Published by

The Chicago Automobile Trade Association
Chicago, Illinois



Starts the Engine Cold

Ford cars are difficult to start in cold weather without

Red Head

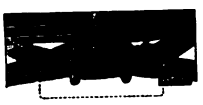
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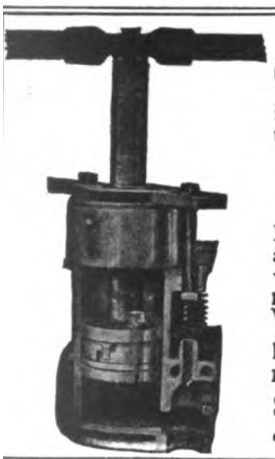
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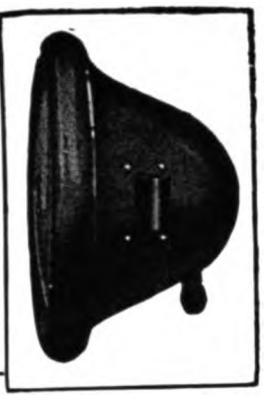
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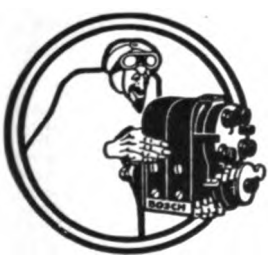
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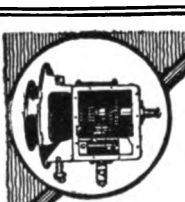
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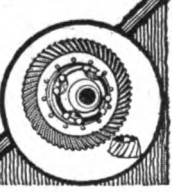


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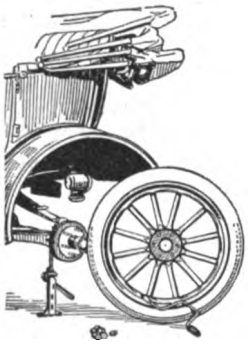
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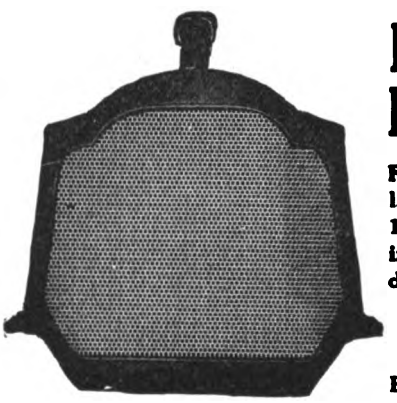
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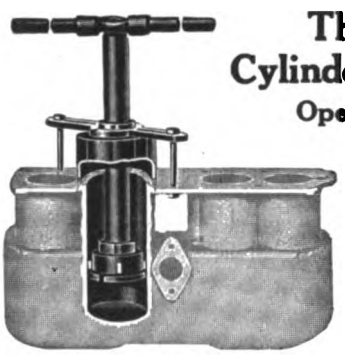
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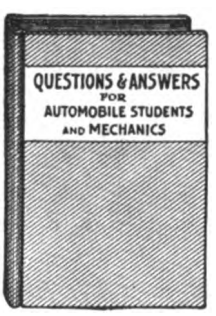
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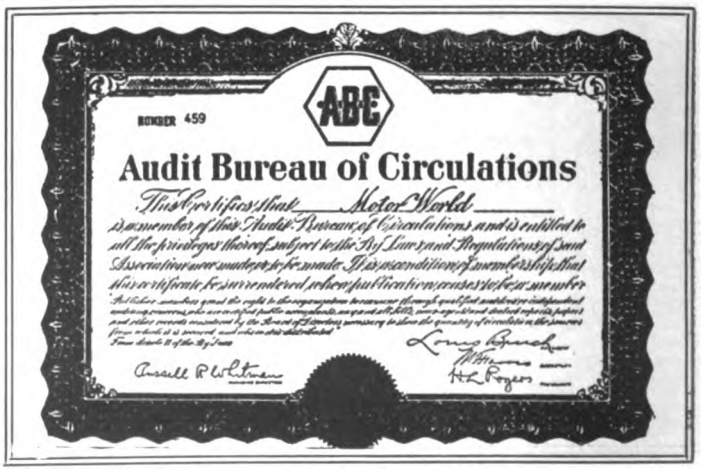
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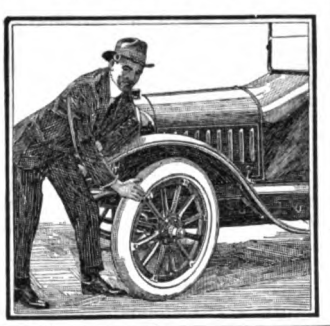
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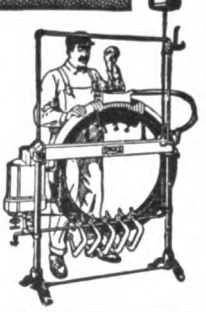
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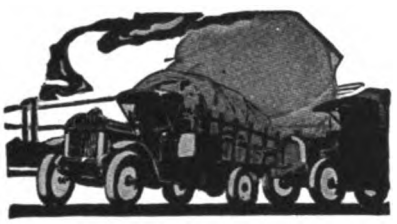
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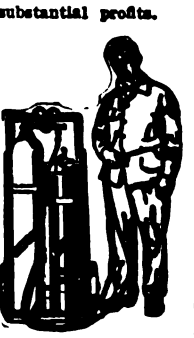
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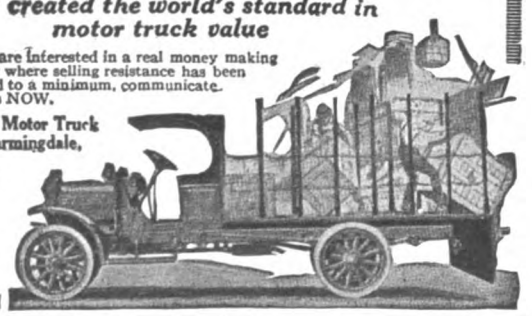
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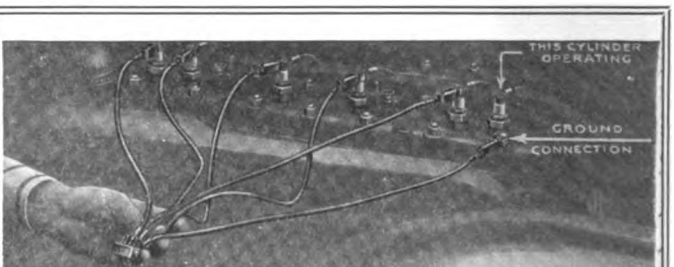
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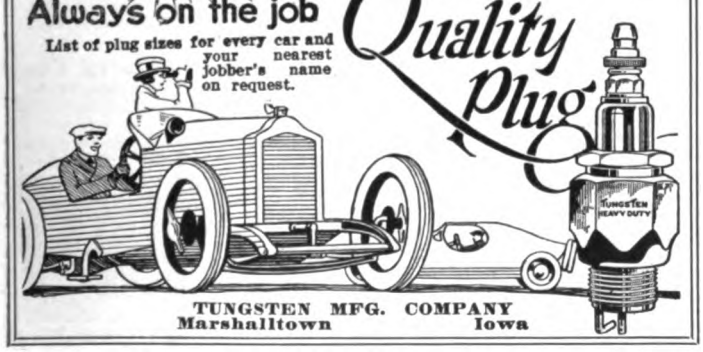
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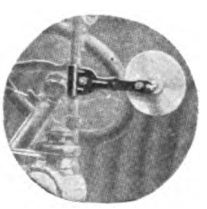
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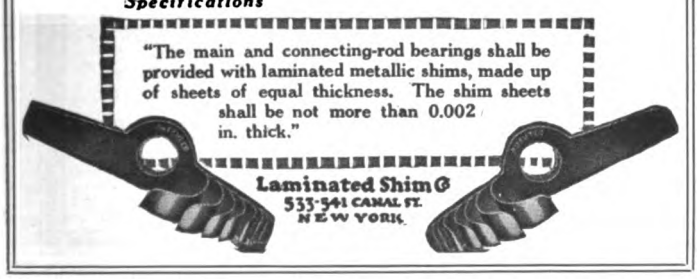
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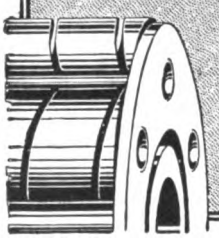
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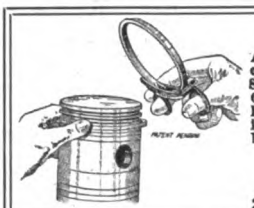
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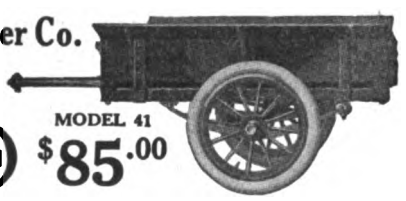


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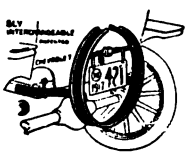


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32x4	14.25	15.75	3.35
33x4	14.75	16.00	3.40
34x4	15.50	16.50	3.60
35x4	15.75	17.00	3.75
36x4	16.50	18.00	4.00
34x4½	21.00	24.00	4.50
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28x3	$7.00	$2.00	32x4	$14.00	$3.35	35x4½	$21.45	$4.20
30x3	7.00	2.00	33x4	14.50	3.50	36x4½	22.00	4.30
30x3½	8.75	2.30	34x4	15.00	3.65	37x4½	22.80	4.60
32x3½	10.50	2.45	35x4	15.85	3.75	35x5	23.10	4.65
34x3½	11.50	2.70	36x4	16.20	3.85	36x5	23.95	4.75
31x4	13.75	3.20	34x4½	20.35	4.15	37x5	24.20	4.95

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30 x 3	6.70	7.05	36 x 4	17.10	17.95
30 x 3½	8.73	9.13	33 x 4½	19.02	19.98
31 x 3½	9.18	9.65	34 x 4½	19.63	20.65
32 x 3½	10.20	10.70	35 x 4½	20.55	21.55
34 x 3½	11.90	12.48	36 x 4½	20.88	21.95
31 x 4	13.38	14.00	37 x 4½	23.90	25.10
32 x 4	13.63	14.30	35 x 5	23.45	24.63
33 x 4	14.27	14.93	36 x 5	26.55	27.85
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30x3½	4.00	36x4	7.00
32x3½	4.50	34x4½	7.50
31x4	5.00	35x4½	7.50
32x4	5.50	36x4½	7.00
34x3½	6.00	37x4½	8.00
33x4	6.00	35x5	8.00
34x4	6.00	36x5	8.00
		37x5	8.00

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31 x 4	5.00	37 x 4½	8.50
32 x 4	5.50	35 x 5	9.00
33 x 4	6.50	36 x 5	9.00
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31x3½	10.75	32x4	14.75	35x4½	23.75	36x4½	24.50
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4	3	Westg.	CS	New	1800
1	3	Westg.	CS	New	900
6	3	Allis-Ch.	AN	New	1800
4	5	Westg.	CS	New	1200
2	5	Howell	SC	New	1200
2	7½	Westg.	CS	New	1800
3	7½	W.E.	KT	New	1200
5	7½	Westg.	CS	New	1800
2	10	Howell	SC	New	1200
1	10	Allis-Ch.	AN	New	720
1	15	Allis-Ch.	AN	New	600

No.	H.P.	Make	Type		R.p.m.
1	15	G.E.	K	Used	1800
2	15	Allis-Ch.	ANY	New	900
1	20	Westg.	CS	New	1200
2	20	W.E.	KT	New	900
3	20	W.E.	KT	New	1200

MOTORS—DIRECT CURRENT—220-VOLT

1	2	G.E., G.E. grinder	Used	1650
1	2	Richmond	SH	Used	1600
1	3½	G.E.	CE	Used	800
1	5	G.E.	SH	Used	1650
1	7½	Richmond	RE	Used	1500
1	7½	Eddy	SH	Used	1000
1	10	Westg.	M	Used	1250
1	15	C.W.	CM	Used	800
1	15	C.W.	SH	Used	725
1	20	Ft. Wayne	B	Used	820
1	25	Westg.	Sec. hoist	Used	750

AIR COMPRESSORS
New—Belted Types

No.	Size	Class	Capacity, Cu. Ft.	Pressure, Lb.Max.
7	3x3	Vertical	3 to 7	150
6	4x4	Vertical	7 to 14	150
4	5x5	Vertical	11 to 23	200
2	6x6	Vertical	20 to 30	200
9	6x6	A.E.	50	125
1	7x6	A.E.	80	100

We also carry Standard Air Tanks in stock.

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STANDARD ELECTRIC & ELEV. CO. 126 S. Calvert St., Baltimore, Md.

SOMEWHERE there is just the lathe or machine that you need for your shop. It's just as good as new—the price will save you many a dollar. Tell Motor World Clearing House Department just what you want and receive by return an advertisement that will carry your message to the man who wants to sell. Address

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Motor World

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Any garage, machine or repair shop with machinery on hand that is out of service for one reason or another will find a ready market and secure good prices through Motor World's Classified Column.

Tell us what you have.

Classified Department Motor World

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Bought and Sold
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SAXER-CREIDER MACHINERY CO.
ERIE, PA.

Lathes and Drills
Shapers and Planers
Grinding Machinery
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ALL KINDS OF MACHINERY

is worth today good money. What have you to sell?

Motor World Classified Column reaches the buyer. Try it for Results.

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Shapers
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Turret Lathes

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The original plant of the Republic Brass & Bronze Co. has been enlarged and improved to take care of five to six million pounds annually. Under new management and ample resources, this foundry is now in shape to take care of your work promptly. Expert attention in the above-named metals and alloys of all kinds is given for special work.

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Under same management as the PRECISION CASTINGS CO., Inc., Syracuse, N. Y.

Special Machinery and Tools

Lathe, Milling Machine, Drill Press and Shaper work. Send samples or blue prints for estimates.

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Wood Patterns. Metal Patterns.
Automobile Work a Specialty.
Models and Experimental Work.
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Phone 4257-4258 Spring.

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PROMPT DELIVERY

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Machining, Polishing, Plating and Pattern Work

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Dies, Models and Machine Work.
Small Turret Lathe Work.
Large and Small Quantities.

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HUNDREDS of machine shops are ready for Contract Work. Tell us your needs and we will find the shop that will handle the work for you.

MOTOR WORLD CONTRACT WORK DEPARTMENT
239 West 39th Street, New York

If your manufacturing requirements cannot be handled by firms now advertising, we should appreciate the opportunity of locating a firm that can render such special service as your business may demand. Our investigation of the contract situation as it now stands places us in a position in which we can be of valuable service to the manufacturers of the automobile industry. If interested, please communicate with the Contract Work Department, Motor World, 239 West 39th St., New York City.

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The Famous 43

There are just that number of steady selling, profit-making items in our catalog of

WONDER WORKER
Auto Specialties

Send for this catalog today. Investigate the line. There's push behind it. A few items:

Wonder Worker Radiator Cement: Repairs leaks 15 minutes without removing radiator. No tools or solder required.

Wonder Worker Rim-Kote. Prevents tire and shoe from sticking to rim. A graphited, quick-drying paint for coating inside rims, demountable or clincher.

Wonder Worker Self-Curing Mohair Top Patches. Quickly and permanently repairs holes, leaks and rips in mohair tops. Absolutely waterproof.

These are a few of the 43. They all do what they say they do and do it well.

Write for our catalog now.

The Hall-Thompson Co.
Manufacturing Chemists
Hartford, Connecticut, U. S. A.

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FOR THE
WOODRUFF SYSTEM

For the benefit of dealers, garages, and repair men, we are prepared to furnish our keys put up in two assortments. Every garage and repair man should keep these on hand. They may be purchased from the leading jobbers or ordered direct from the factory.



Regular Assortment

One hundred keys of the sizes most likely to be required for repair work.

Ford Assortment

One set of keys for the Ford car. These keys are of the special material and special treatment specified by the Ford Motor Company.



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HARTFORD, CONN.

Chains *Keys* *Hand Milling Machines*

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Special Wrenches for OVERLAND FORD BUICK DODGE CARS

Are You Using Free Display Boards

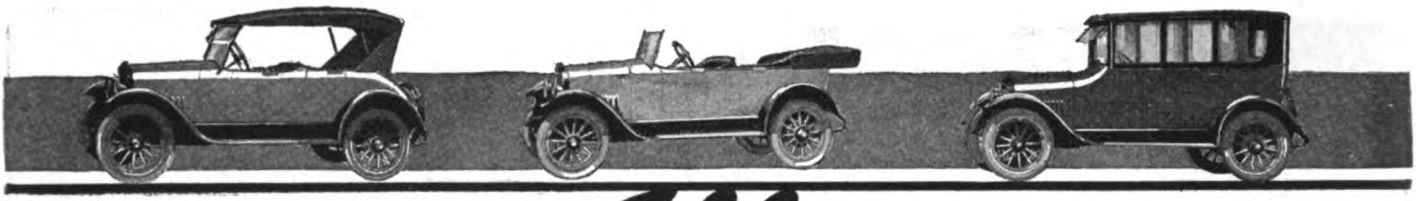
WALDEN WORCESTER WRENCHES

Let us tell you all about it

Send for Catalog No. 200

WALDEN-WORCESTER
INCORPORATED
WORCESTER, MASS.

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Allen
New Series 41

Revealing the Hidden Goodness

The appearance and performance of the new Series 41 Allen is an index of its hidden goodness.

This car welcomes a scrutiny of its innermost mechanism, of the units unseen, which constitute by far the greater part of the cost of every car.

The Allen is finely built and its performance shows it.

Over five years of service among nineteen thousand owners has established a firm confidence in its worth.

Wherever it is known, it is well known,—and well liked.

Tremendously severe were the tests imposed upon this new and refined Allen.

Through the mountains of Colorado, over the sands of Texas, up and down the gruelling hills of Pennsylvania—these trials confim its great fund of power, rugged stamina and exceptional economy.

The Allen brothers have but one thought—to build so well and so enduringly that Allen owners will continue to prefer their car.

With increasing force the desirability of owning an Allen is spreading throughout the land.

Address Sales Division, 112 Allen Building

The Allen Motor Company, Fostoria, Ohio

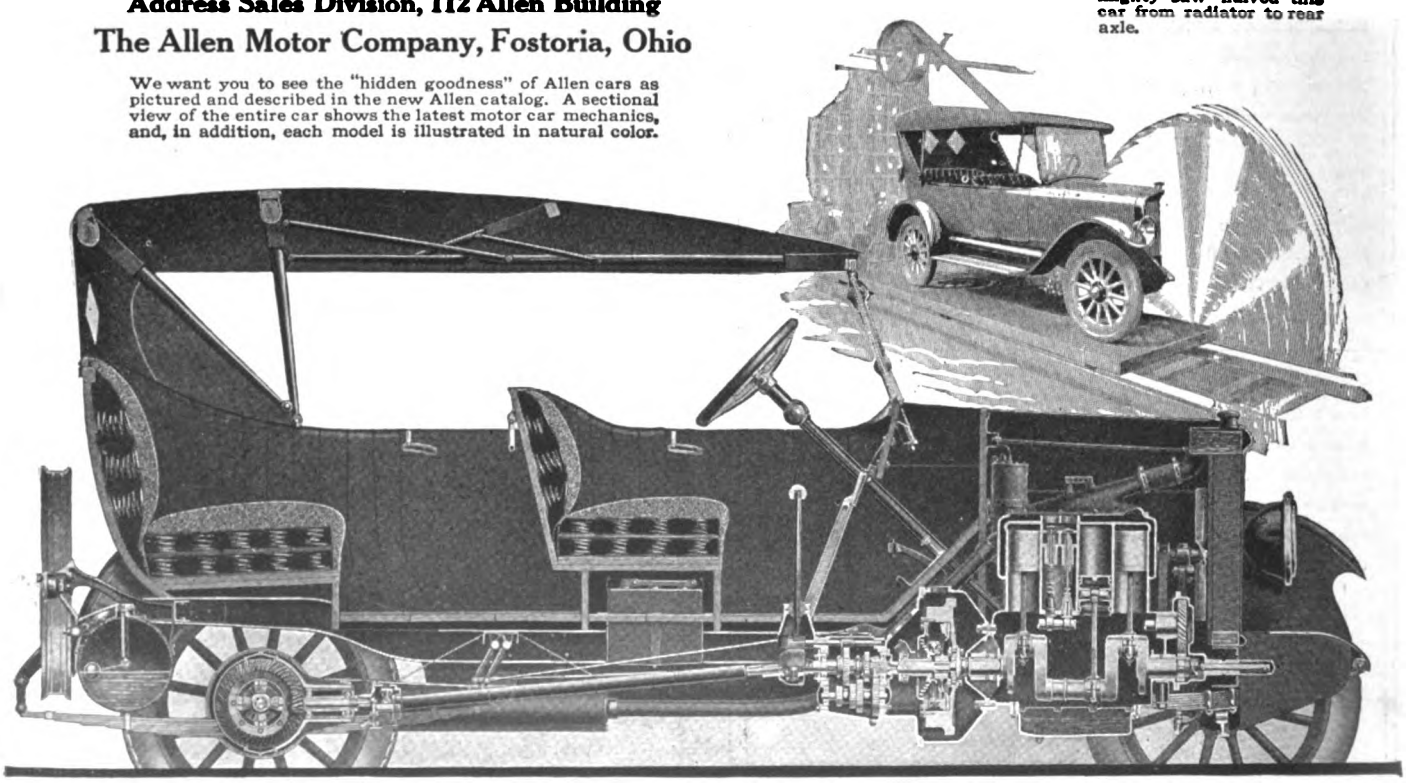
We want you to see the "hidden goodness" of Allen cars as pictured and described in the new Allen catalog. A sectional view of the entire car shows the latest motor car mechanics, and, in addition, each model is illustrated in natural color.

Allen Design

Four cylinder, 3¾″x5″ motor—abundant, smooth power without noise or vibration, combined with unusual economy. "Perfex" honeycomb type radiator. The highly regarded Borg & Beck single dry disc clutch. Rugged transmission with nickel steel gears, S. K. F. bearings. Full floating rear axle—quiet running, spiral cut gears. 55″ Vanadium springs—flexible action with minimum rebound. Hotchkiss drive—ideal power application. Rotary electric control switch on steering column—all control devices positive, convenient and easily operated. Pure streamline bodies—high, rounded hood, full crowned fenders; slanting windshield; double-deck cushion springs; wide seats and ample leg room. Stewart-Warner vacuum fuel feed—gasoline gauge: Stewart speedometer; Auto-Lite electric starter; Connecticut Automatic ignition; Stromberg carburetor; non-skid tires in rear.

$1095 for 5-passenger Touring Car or 4-passenger Roadster
$1395 for 5-passenger Sedan
Prices f. o. b. Fostoria, Ohio

What you would see if a mighty saw halved this car from radiator to rear axle.



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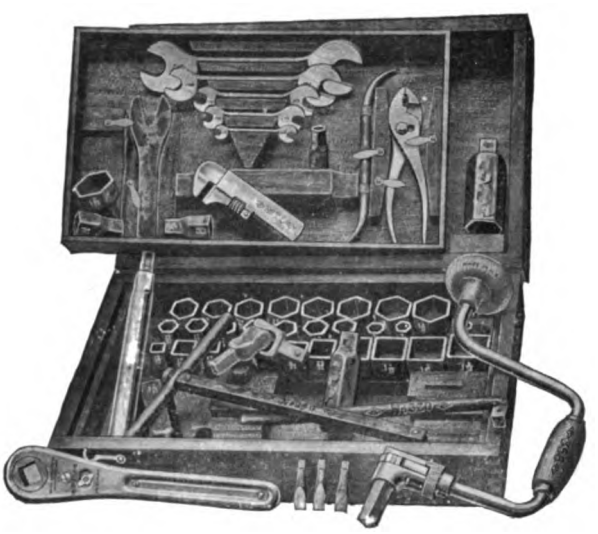
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Thoroughly Dependable and Guaranteed Absolutely

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For making repairs and adjustments in the best, quickest, and easiest manner. A glance at the contents explains why this most complete set "speaks for itself." The set contains Reversible Ratchet Wrench, Offset Handle, Takedown Handle and Extension Bar, Pipe Wrench, Pliers, Five D. E. Wrenches, with milled openings ¼" to 1", Cotter Pin Puller, Universal Joint, Screw Driver Bits, Three Special Spark Plug Sockets and Thirty-four Guaranteed ◆ Pressed Steel, Square and Hexagon Sockets, graduated by 32nds, from 5/16" to 1 9/32". No. 14 Set.

Price $13.50



DEALERS' DISPLAYS—Just the wrenches that sell—Just the way to sell them.



"R" Board for FORDS

Ten different Ford Necessities of Mossberg manufacture that the Ford owner just naturally must have. Consists of 27 Tools that list for **$12.00**

Mossberg's "T" Board

An attractive article in itself, it displays 23 unbeatable ◆ adjustable wrenches. A good profit is made, as they list for **$13.00**



"T" Display Board



"X" Display Board

Exhibits Single End, Double End and "S" Wrenches; Adjustable Wrenches, and Pliers.

No. 300 Socket Chest.

Contains 300 Regular ◆ Guaranteed Pressed Steel Sockets, Assorted, besides Reversible, Offset, and Takedown Handles, Extension Tubes, Universal Joints, etc. A dandy finished fixture for supplying a positive demand.

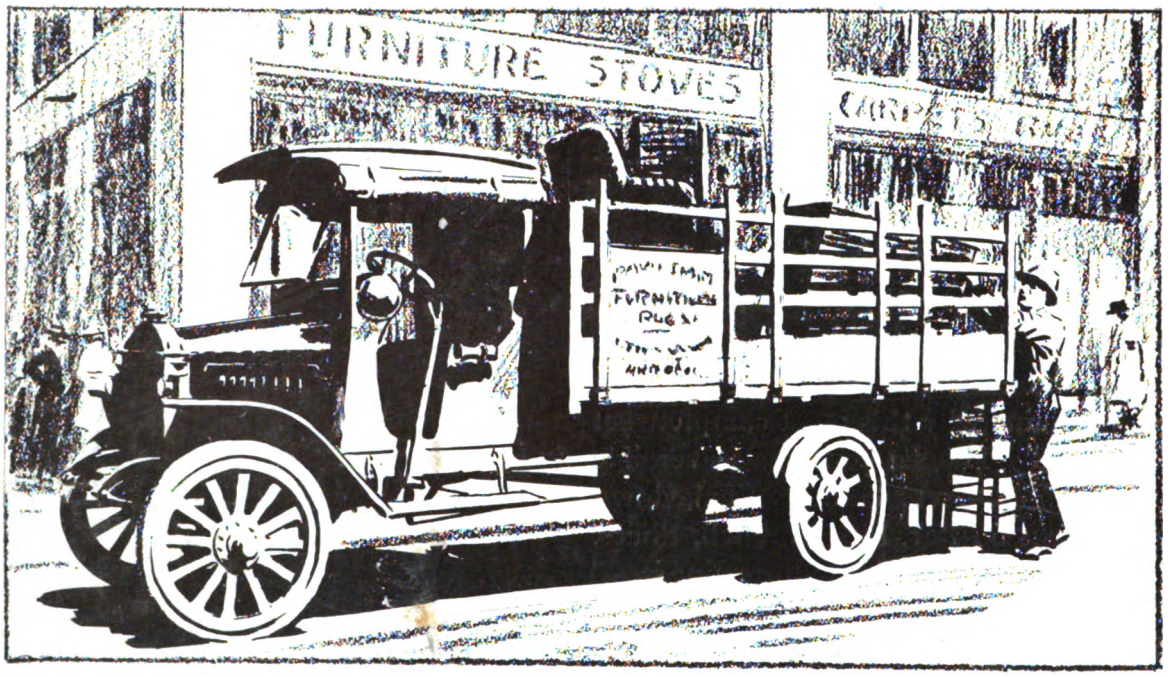


No. 300 Socket Chest

You know the firm. Get acquainted with its products. See Catalog 191-1

FRANK MOSSBERG CO., ATTLEBORO, MASS. U. S. A.

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MOTOR TRUCKS

Pioneers of the Internal Gear Drive

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to
5 tons



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